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WILDLIFE REVIEW

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WILDLIFE REVIEW

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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor.

SOILS

Campbell, I. B., and G. G. C. Claridge. A SEQUENCE OF SOILS FROM A PENGUIN ROOKERY, INEXPRESSIBLE ISLAND, ANTARCTICA. New Zealand J. Sci. 9(2):361-372, 4 figs. June 1966. WR 123: 2

[DSIR, Lower Hutt, New Zealand.] Summary: Penguin occupation results in changes in the properties of soils in rookery sites in Antarctica. Particle-size distribution is altered by nest building and the accumulation of fine-textured particles from the breakdown of shell material and faecal matter. After nesting sites have been abandoned the organic matter breaks down and carbon, nitrogen, phosphorus, and other salts are leached from the soil. Nesting sites abandoned at some earlier period may be identified only by accumulations of the small stones that were used for nest building.

PLANTS--GENERAL, ECOLOGY, TECHNIQUES

Kulow, D. L. COMPARISON OF FOREST SAMPLING DESIGNS. J. Forestry 64(7): 469-474. July 1966. WR 123: 2

[W. Va. Univ., Morgantown.] Abstract: To test the accuracy of current forest sampling techniques, three forest areas were mapped to scale and sampled by 144 sampling designs. Six plot sizes were applied to each of six areal plot shapes. The types of Bitterlich points were examined on a basal area factor of 5, 10, 20, 30, 40, and 50. One type was adjusted for edge bias according to Grosenbaugh's peripheral zone scheme, while the "unadjusted" points were corrected by formula during analyses. All of these sample unit shapes and sizes were then applied to random, systematic, and multiple-random-start distributions. The precision of each method was tested by running an analysis of variance on the sampling error of each design. Accuracy was measured by comparing the estimated means with the actual means. The 1/5th and 1/10th acre plots and the RAF-5 and BAF-10 point-samples were all equal with respect to these two parameters. The distribution design affected precision and accuracy, but not decisively so. On one forest all were equally precise, but the random was the most accurate. On the second forest, precisions were equal but the systematic design was most accurate. On the third forest, all were equally accurate, but the random design was the most precise. The multiple-random-start design was very inaccurate when analyzed by cluster analysis techniques. Grosenbaugh's peripheral zone techniques produced results that were neither precise nor accurate. Precision and accuracy by this method varied universally with the proportion of the population sampled. Plot shape was of no consequence in this study.

Strong, Charles W. AN IMPROVED METHOD OF OBTAINING DENSITY FROM LINE-TRANSECT DATA. Ecology 47(2): 311-313, 1 fig. Early Spring 1966. WR 123: 2

[Columbia, Mo.] Abstract: Measurements are taken perpendicular to the transect across the greatest extent of each intercepted plant. The sum of the reciprocals of these measurements is multiplied by the desired unit-area and divided by the length of the transect to obtain the density statistic. The relationship of this method to that of McIntyre (1953) is discussed, and the stratified random sampling pattern is suggested in preference to a single long transect.--Courtesy/ Paul A. Stewart.

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Lawrence, George E. ECOLOGY OF VERTEBRATE ANIMALS IN RELATION TO CHAPARRAL FIRE IN THE SIERRA NEVADA FOOTHILLS. Ecology 47(2): 278-291, 10 figs. Early Spring 1966. WR 123: 2

[Bakersfield Coll., Bakersfield, Calif.] Chaparral fire brings decided changes in the species composition and density of both plant and animal populations in the Sierra Nevada foothills. Some species decrease whereas others increase following a burn, but no species is totally eliminated, nor is there any apparent diminution of total life on a burn after plant growth resumes. There was very little evidence of direct mortality among any of the vertebrates,

most of them escaping the heat in one way or another. The woodrat was perhaps the most vulnerable species because of its dependence on houses made of dry twigs. However, in the bare ash after the fire many species were severely exposed to predation, and populations of most small mammals and some brush-dwelling birds decreased rapidly. Predatory birds and mammals increased, as did some seed-eating birds that found good foraging on the exposed earth. Birds and mammals that normally exhibit a strong preference for chaparral habitat were substantially reduced in numbers in the years following the burn. Conversely, some of the birds that normally prefer grassland or oak woodland increased in number. The fire resulted in an overall increase in densities of nesting birds. None of the small mammals increased in numbers but some of the larger predators, such as the coyote and badger, moved into the burn during the months following the fire.--From abstr. Courtesy/ Paul A. Stewart.

WILDLIFE--NATURE PROTECTION & RARE & EXTINCT SPECIES

Lies, Michael F., and William H. Behle. STATUS OF THE WHITE PELICAN IN THE UNITED STATES AND CANADA THROUGH 1964. Condor 68(3): 279-292, 1 fig. May-June 1966. WR 123: 3

[Univ. Utah, Salt Lake City.] "The white pelican is, we feel, a threatened species, although not in the usual sense of that term of being faced with extinction like the California condor and the whooping crane. There has been a long-range decline in numbers, and the species is not entirely protected." Increased protection of the bird and its habitat are recommended.--Courtesy/ Paul A. Stewart.

Mel'nikov, G. V. [JAPANESE ANIMALS WHICH ARE BECOMING EXTINCT OR ARE RARE.] Priroda 8: 100-103. 1958. [From Biol. Abstr. 47(13), 1966, from Referat. Zhur., Biol., 1959, no. 32905. Transl. of Russian abstr.] WR 123: 3

Japanese sources from 1954-1957 report the complete disappearance in Japan of the wolf (the last was killed in 1905), skua (19th century), woodpecker Dryocopus richardsi (on Tsusim island; the last observations were in the beginning of the 20th century), the white ibis Threskiornis melanocephala. Several other species are near extinction.

WILDLIFE--EFFECTS OF CHEMICALS, WEATHER, CARS, ETC.

Churkina, N. M. [THE EFFECTS OF TOXIC CHEMICALS AND MINERAL FERTILIZERS ON BIRDS.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 120-124. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 4I310. Transl. of Russian abstr.] WR 123: 3

Eiberle, K. EINIGE BEMERKUNGEN ZUM WILDTOD DURCH LANDWIRTSCHAFTLICHE MASCHINEN. [SOME OBSERVATIONS ON THE DEATH OF GAME THROUGH AGRICULTURAL MACHINES.] Schweiz. Z. Forstwesen 116(6): 529-533. 1965. [From Biol. Abstr. 47(13), 1966. In German.] WR 123: 3

Fedorenko, A. P. [EXPERIMENTAL VERIFICATION OF THE EFFECT OF INSECTICIDES AND HERBICIDES ON GAME BIRDS.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 125-131. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 4I321. Transl. of Russian abstr.] WR 123: 3

"Perdix perdix and Anas platyrhynchos."

Hartung, Rolf, and George S. Hunt. TOXICITY OF SOME OILS TO WATERFOWL. J. Wildl. Mgmt. 30(3): 564-570. July 1966. WR 123: 3

[Univ. Mich., Ann Arbor.] Abstract: A number of industrial oils were tested for their toxic effects on waterfowl. All oils were able to cause lipid pneumonia, gastrointestinal irritation, fatty livers, and adrenal cortical hyperplasia when fed to ducks in single doses by stomach tube. Feeding of a cutting oil and a diesel oil also resulted in acinar atrophy of

the pancreas. The diesel oil and a fuel oil produced toxic nephrosis in a number of animals. Feeding the cutting oil produced a definite inhibition of cholinesterase activity while the diesel oil depressed cholinesterase activity only slightly. Approximate LD_{50} values were determined for a number of oils under different environmental conditions. Gross examination of a series of 41 ducks which had been killed by oil pollution in the wild showed, at autopsy, changes similar to those encountered in the experimentally fed ducks. It was concluded that the toxicity of polluting oils is a definite factor in the observed mortalities due to oil pollution.

Jefferies, D. J., and I. Prestt. POST-MORTEMS OF PEREGRINES AND LANNERS WITH PARTICULAR REFERENCE TO ORGANOCHLORINE RESIDUES. British Birds 59(2): 49-64. Feb. 1966. WR 123: 4

[Monks Wood Expt1. Sta., Huntingdon, England.] Falco peregrinus and F. biarmicus. The lethal range is indicated by a residue of 5.2-9.3 ppm in the liver. A theoretical calculation suggests that lethal residues could be obtained by the falcons ingesting a few highly contaminated prey rather than a large number of prey with small residues.--From summ.

Keith, James O., and Mir S. Mulla. RELATIVE TOXICITY OF FIVE ORGANOPHOSPHORUS MOSQUITO LARVICIDES TO MALLARD DUCKS. J. Wildl. Mgmt. 30(3): 553-563, 3 figs. July 1966. WR 123: 4

[Bur. Sport Fisheries & Wildl., Davis, Calif.] Abstract: The toxicity and potential field hazards of five mosquito larvicides to mallard ducks were investigated through laboratory and field-enclosure studies. The insecticides tested, parathion, Baytex, Sumithion, Guthion, and SD-7438, are either in use or are considered for use in mosquito suppression programs in California. Laboratory tests showed that parathion and Baytex were highly toxic to ducks in acute doses, while Sumithion, Guthion, and SD-7438, in that order, manifested decreasing acute toxicity. Chronic feeding trials varying from 5 to 9 weeks were conducted with the five insecticides at 25 ppm in diet, and also with parathion and Baytex at 5 ppm in diet. Ducks given diets contaminated with 25 ppm Sumithion, Guthion, and SD-7438, and 5 ppm parathion and Baytex showed no definite reaction to their exposure. Birds on 25 ppm parathion and Baytex in diets were repelled by their diets, lost considerable weight, and ultimately some died. Surviving birds recovered rapidly after they were placed on non-contaminated diets. Small experimental ponds containing pinioned mallards were sprayed six times at biweekly intervals with 0.4 lb/acre of the insecticides. Birds were not sprayed directly, were fed noncontaminated feed, and maintained on ponds for 6 months after treatments. Toxicity trials in the laboratory indicated a potential hazard of Baytex and parathion to mallards, but ducks showed no apparent effects of exposure to any of the insecticides in pond trials.

McEwen, Lowell C., and Robert L. Brown. ACUTE TOXICITY OF DIELDRIN AND MALATHION TO WILD SHARP-TAILED GROUSE. J. Wildl. Mgmt. 30(3): 604-611, 2 figs. July 1966. WR 123: 4

[Bur. Sport Fisheries & Wildl., Denver, Colo.] Abstract: Fifty-two adult male sharp-tailed grouse were live-trapped on the breeding grounds in Montana and administered single, oral doses of dieldrin, malathion, or lactose, and released. Reactions to the insecticides were determined by observing neck-tagged grouse on the breeding grounds and by radio-tracking grouse carrying transmitters. Lethal doses of dieldrin ranged from 5.0 to 32.2 mg/kg and the calculated LD_{50} was 6.9 mg/kg. Results with malathion-dosed birds were more variable, but the lethal dosage appeared to lie between 200 and 240 mg/kg. Fourteen procedural control birds all survived and continued their breeding activity normally. These results generally were comparable to results of tests with penned sharptails. In the wild grouse, however, there was some evidence that birds dosed at sublethal levels were more than normally vulnerable to predators. Some interesting behavioral responses were also observed. Changes occurred in social hierarchy and effective breeding behavior was terminated in some of the grouse treated at sublethal levels.

WILDLIFE--PARASITES & DISEASES

Bassini, Ettore. RISULTATI DEGLI ESAMI EFFETTUATI SU DIVERSE SPECIE DI SELVAGGINA. [RESULTS OF EXAMINATIONS MADE OF VARIOUS SPECIES OF WILDLIFE.] Ric. Zool. Appl. Caccia 41: 1-26, 8 figs., 2 pls. 1966. In Italian with summaries in English, French and German. WR 123: 5

Coccidiosis is common to birds and mammals and increasing, while verminous diseases are decreasing and typhlo-hepatitis is remaining constant.

Schad, G. A. IMMUNITY, COMPETITION, AND NATURAL REGULATION OF HELMINTH POPULATIONS. Am. Nat. 100(913): 359-364. July-Aug. 1966. WR 123: 5

[Johns Hopkins Univ., Baltimore, Md.] Conclusions: A hypothesis is proposed which considers nonreciprocal cross immunity as one of several mechanisms evolved in the adaptation of a parasite to its environment and limiting the populations of competing parasitic species. Nonreciprocal cross immunity may, therefore, be viewed as a special kind of competitive interaction between two species, which is mediated by a third species, the host. The hypothesis provides a theoretical framework which may make some cases of nonreciprocal acquired resistance to parasites more compatible with immunological concepts. Furthermore, it provides a basis for understanding the function of antibodies that appear in parasitic infections, but are ineffective against the species eliciting this response.

Shumakovich, E. E. [THE RUSSIAN NOMENCLATURE FOR HELMINTHS AND HELMINTHIASES.] Trudy Vses. Inst. Gelmintol. 11: 175-183. 1964. [From Biol. Abstr. 47(9), 1966, from Referat. Zhur., Biol., 1965, no. 16K1. Transl. of Russian abstr.] WR 123: 5

WILDLIFE--BIOMETRICS

Loveless, C. M., G. N. Sarconi, J. W. DeGrazio, and C. H. Halvorson. A SIMPLIFIED DATA-RECORDING METHOD. J. Wildl. Mgmt. 30(3): 519-522, 1 fig. July 1966. WR 123: 5

[Denver Wildl. Res. Center, Denver, Colo.] Abstract: A versatile and inexpensive procedure for recording source-data was successfully developed and tested April-October, 1965. The system consists of employing overlay templates with standard, 800-position Optical Mark Page Reader forms, and recording data in such a manner that they are immediately convertible to machine language on IBM's 1230 series Optical Mark Page Readers. Principal advantages of the template approach over traditional source-data recording methods include: (1) its versatility, convenience, and adaptability; (2) a reduction in initial cost because necessary materials are inexpensive; and (3) a substantial reduction in the cost and time required to key punch and verify numeric information, or to organize and tabulate data by hand.

Rupp, Robert S. GENERALIZED EQUATION FOR THE RATIO METHOD OF ESTIMATING POPULATION ABUNDANCE. J. Wildl. Mgmt. 30(3): 523-526. July 1966. WR 123: 5

[Maine Dept. Inland Fisheries & Game, Orono.] Abstract: A number of previously described methods of population estimation which are based on changes in relative abundance of two classes of individuals in a population are really one method which can be presented as one basic equation. The algebraic derivation of the equation is presented, along with examples of population estimation problems which demonstrate its usefulness in many situations.

WILDLIFE--TECHNIQUES

Berry, G., T. J. Cleaver, J. A. Nelder, and P. J. Salter. METHODS OF RECORDING DATA IN THE LABORATORY AND FIELD. Exptl. Agr. 2(1): 69-80, illus. 1966. [From Biol. Abstr. 47(12), 1966.] WR 123: 5

[Nat. Vegetable Res. Sta., Wellesbourne, Warwick, England.] Methods of recording experimental data in the laboratory and field are discussed. Use of specially designed record sheets, punch cards and punched paper tape in conjunction with an electronic computer extends the scope of experimental work and leads to improved efficiency and accuracy.

Gans, Carl. AN INEXPENSIVE ARRANGEMENT OF MOVIE CAMERA AND ELECTRONIC FLASH AS A TOOL IN THE STUDY OF ANIMAL BEHAVIOUR. Animal Behaviour 14(1): 11-12 + 1 pl. Jan. 1966. WR 123: 6
[State Univ. N.Y. at Buffalo, Buffalo.]

Parin, V. V., and R. M. Baevskii. [SOME PROBLEMS OF MODERN BIOLOGICAL TELEMETRY.] Fiziol. Zhur. SSSR Im. I. M. Sechenova 50(8): 924-933. 1964. [From Biol. Abstr. 47(9), 1966, from Referat. Zhur., Biol., 1964, no. 23N3. Transl. of Russian abstr.] WR 123: 6

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Bever, Wendell. SPACE-AGE RESEARCH. Outdoor Okla. 22(5): 2-4, illus. May 1966. WR 123: 6
Popular account of recent developments in wildlife research.

Phillips, Glen. STUDY OF A ROW OF MULTIFLORA ROSE PLANTINGS. Redstart 33 (3): 66-74. July 1966. WR 123: 6
[R.D. 2, Triadelphia, W. Va.] Comparative studies of a 2000-ft. multiflora rose fence and a control area. Approximately 20% more birds wintered on the rose plot, and the singing male census indicated a 75% heavier population.

Schnapp, B., A. Papadopol, and S. Hellwing. MAMMALOGISCHE UND ORNITHOLOGISCHE FORSCHUNGEN IN DER RUMÄNISCHEN VOLKSREPUBLIK. [MAMMALOGICAL AND ORNITHOLOGICAL RESEARCH IN RUMANIA.] Trav. Mus. Hist. Nat. "Grigore Antipa" 4: 73-117, illus. 1963. [From Biol. Abstr. 47(10), 1966. In German with Romanian and Russian summ.] WR 123: 6

WILDLIFE--INTRODUCTIONS

Barros-Valenzuela, Rafael. VARIAS AVES CUYA ACLIMATACIÓN CONVENDRÍA AL PAIS. [SEVERAL BIRDS WHOSE ACCLIMATIZATION IN CHILE SHOULD BE CONVENIENT.] Acad. Chilena Cienc. Nat. 49(27): 109-112. 1964. [From Biol. Abstr. 47(13), 1966. In Spanish.] WR 123: 6
[Acad. Chilena Cienc. Nat., Santiago, Chile.] Though the introduction in Chile of the sparrow (Passer domesticus) and the Argentinian thrush (Molothrus bonariensis bonariensis) has been damaging to the country, the acclimatization of the following birds is recommended: quail (Colinus virginianus virginianus); European quail (Coturnix coturnix); Argentinian partridges Nothura darwini and Nothoprocta cinerascens, as well as Colopezus elegans; European wild dove (Columba livia); common European duck (Anas platyrhyncha); European chaffinch (Pravigilla coelebs) and the nightingale (Luscinia megarhyncha); European lark (Alauda arvensis); Furnaris rufus rufus from Argentina and Uruguay; the ortolan (Emberiza hortulana); European pheasant (Phasianus colchicus colchicus); robin (Erithacus rubecula); linnet (Carduelis carduelis); royal chaffinch (Fringilla montifringilla); etc.

WILDLIFE--FOOD HABITS & TECHNIQUES

Patton, David R., and John M. Hall. EVALUATING KEY AREAS BY BROWSE AGE AND FORM CLASS. J. Wildl. Mgmt. 30(3): 476-480, 4 figs. July 1966. WR 123: 6
[Rocky Mountain Forest & Range Expt. Sta., Tempe, Ariz.] Abstract: Key areas on game range can be evaluated by browse age and form class. A scorecard is used, by which browse condition (good, fair, or poor) and trend (up, stable, or down) are determined from a summary of plant age and form class. By assigning values (5, 10, or 15 points) to each condition and trend class and then summing points, browse on the key area can be expressed as excellent (30), good (25), fair (20), poor (15), or very poor (10).

Short, Henry L., Donald R. Dietz, and Elmer E. Remmenga. SELECTED NUTRIENTS IN MULE DEER BROWSE PLANTS. Ecology 47(2): 222-229, 2 figs. Early Spring 1966. WR 123: 7

[Southern Forest Expt. Sta., Nacogdoches, Texas.] Abstract: Nine plant species believed to be important to mule deer (Odocoileus hemionus) on the Cache la Poudre range of Colorado were collected at four seasons during 1961, from five study areas which varied in altitude from 6,400 to 10,300 ft. Eleven chemical components were analyzed for each of the 77 plant samples. In a deciduous species (Purshia tridentata) the percentage dry matter and crude fat, and the caloric content varied from high autumn-winter levels to low spring-summer values; and beta carotene and percentage protein, ash, phosphorus, potassium, calcium, sodium, and magnesium levels varied from low autumn-winter values to high spring-summer values. In an evergreen species (Juniperus scopulorum) the seasonal changes in plant chemistry were not so pronounced. Major variations in the measured components were attributable to two causes in the following order: (1) differences in nutrient levels between species; (2) differences in nutrient levels measured for one plant species at the four seasons. Minor variations were evident within single species when sampled in a specific season at different areas throughout its range. The normal and predictable variation in plant chemistry caused by seasonal changes in plant phenology and physiology has important implications to the nutrition and physiology of deer.--Courtesy/ Paul A. Stewart.

WILDLIFE--PREDATION, CROP DAMAGE, CONTROL

Libby, John L., and Joe I. Abrams. ANTICOAGULANT RODENTICIDE IN PAPER TUBES FOR CONTROL OF MEADOW MICE. J. Wildl. Mgmt. 30(3): 512-518, 6 figs. July 1966. WR 123: 7

[Univ. Wis., Madison.] Abstract: A grain bait treated with an anticoagulant rodenticide (Prolin) and attached by an edible glue to the inside of water repellent paper tubes was tested for the control of meadow mice (Microtus pennsylvanicus) at Sturgeon Bay, Wisconsin, during fall, winter, and spring, 1964-65. In the laboratory, seven of eight mice that could choose other food ate an average of 9.7 g of Prolin-treated bait in 10 days and survived from 4-10 days. Eight mice given no choice ate an average of 8.2 g of bait and survived from 3-7 days. When eight mice were placed in baited caged areas around apple trees all activity ceased in 5 days. In orchard plot tests all trees escaped mouse damage in an area baited for 2 months. In an area baited 18 days, 11 percent of trees were damaged, compared to 39 percent in the unbaited control area.

WETLANDS & WILDLIFE

Rees, Don M., and Dean M. Andersen. RESULTS OF MULTIPURPOSE WATER MANAGEMENT STUDIES ON MARSHES ADJACENT TO THE GREAT SALT LAKE, UTAH. Mosquito News 26(2): 160-168, 1 fig. June 1966. WR 123: 7

[Univ. Utah, Salt Lake City.] "These marshlands provide a habitat for about 140 species of birds, 29 species of mammals, 7 species of fish and numerous reptiles, amphibians and invertebrate animals. They also provide recreation for man in the form of hunting, fishing, boating, picnicking, photography and nature studies and produce commercial crops such as carp, muskrat pelts, forage for domestic animals, salt grass as a packing material and bedding for livestock and on private property the sale of hunting privileges. Agricultural crops produced on some of the higher ground adjacent to the strip of marshland provide grazing for domestic animals on native and improved pastures, salt grass crops, forage and grain crops and food and cover for wildlife."

RANGELAND & WILDLIFE

Urness, Philip Joel. INFLUENCE OF RANGE IMPROVEMENT PRACTICES ON COMPOSITION, PRODUCTION, AND UTILIZATION OF ARTEMISIA DEER WINTER RANGE IN CENTRAL OREGON. Ph.D. thesis, Oreg. State Univ. 195 p. 1966. [From Dissertation Abstr. 26(11), 1966.] WR 123: 8

FORESTLAND--MANAGEMENT FOR & DAMAGE BY WILDLIFE

Heidenreich, E. [FIELD MICE IN FOREST STANDS.] Z. f. Angew. Ent. 55(4): 400-408. Apr. 1965. [From Bibliog. Agr. 30(3), 1966. In German with English summ.] WR 123: 8

Lyon, L. Jack. INITIAL VEGETAL DEVELOPMENT FOLLOWING A PRESCRIBED BURNING OF DOUGLAS-FIR IN IDAHO. USDA, US Forest Serv. Res. Paper INT-29. 17 p., illus. 1966. WR 123: 8
[Intermountain Forest & Range Expt. Sta., Missoula, Mont.] Abstract: Reports and evaluates the ecological significance for wildlife habitat of early plant recovery following the prescribed burning in Neal Canyon in 1963; compares recovery from this burn with recovery following the Sleeping Child fire in 1961.

MAMMALS--GENERAL

Olson, Everett C. COMMUNITY EVOLUTION AND THE ORIGIN OF MAMMALS. Ecology 47(2): 291-301, 5 figs. Early Spring 1966. WR 123: 8
[Univ. Chicago, Chicago, Ill.] Courtesy/ Paul A. Stewart.

Simpson, C. David. A KEY TO THE IDENTIFICATION OF CARNIVORE SKULLS IN RHODESIA AND ZAMBIA. Arnoldia 2(18): 1-32, 25 figs. 21 Feb. 1966. WR 123: 8
[Natl. Museums Rhodesia, Bulawayo, Rhodesia.]

Stull, J. W., W. H. Brown, Gerald L. Kooyman, and W. H. Huibregtse. FATTY ACID COMPOSITION OF THE MILK FAT OF SOME DESERT MAMMALS. J. Mammal. 47(3): 542. Aug. 1966. WR 123: 8
[Univ. Ariz., Tucson.]

MAMMALS--TECHNIQUES

de la Torre, Luis, and Margaret P. Dysart. A METHOD FOR PHOTOGRAPHING TEETH OF SMALL MAMMALS. J. Mammal. 47(3): 515-518, 3 pls. Aug. 1966. WR 123: 8
[Univ. Ill., Chicago.] Aerosol spray of pigmented plastic used to obtain tonal differences.

Soldatova, A. N. [USES OF DIFFERENT METHODS OF RODENT MARKING IN ECOLOGICAL STUDIES.] Zool. Zhur. 44(2): 266-275, illus. 1965. [From Biol. Abstr. 47(9), 1966. In Russian with English summ.] WR 123: 8
[Moscow State Univ., Moscow, USSR.]

Tanaka, Ryo. SIMULATED REMOVAL TRAPPING CONSIDERED IN CONNECTION WITH ACTUAL CENSUS DATA IN SMALL MAMMALS. Res. Population Ecol. 8(1): 14-19, 4 figs. June 1966. In English with Japanese summ. WR 123: 8
[Kochi Women's Univ., Kochi, Japan.] Summary: A record of simulated removal trapping of 50 samples drawn from N=50 under a design has been considered as to how it does contribute to practical censuses of small mammals. It follows that, for ordinary-density populations so far experienced, the removal census based on the theory may frequently lead to quite wrong estimates from single-plot data by the simplest method, and that the maximum likelihood method is doubtless better, but even this method may produce right estimates in about half of the cases, their standard error being of limited availability. Therefore pooling of data from many plots are desirous for such populations.

MAMMALS--FAUNAS & MANUALS

Dixon, J. E. W. NOTES ON THE MAMMALS OF THE NDUMU GAME RESERVE. Lammergeyer no. 6. p. 24-40. June 1966. WR 123: 9
[Exeter Game Ranch, Newington, Transvaal, South Africa.] Annotated systematic list with tabulations of predators of small mammals and parasite/host list.

Hellwing, S., and Gabriela Ghizelea. SMALL MAMMALS FROM THE OUTSKIRTS OF JASSY. Trav. Mus. Hist. Nat. "Grigore Antipa" 4: 497-519, illus. 1963. [From Biol. Abstr. 47(10), 1966. With Romanian and Russian summ.] WR 123: 9

Schnapp, B. THE MAMMALS OF ROMANIA. Trav. Mus. Hist. Nat. "Grigore Antipa" 4: 473-496, illus. 1963. [From Biol. Abstr. 47(10), 1966. With Romanian and Russian summ.] WR 123: 9

Shidlovskii, M. V. [MAMMALIAN FAUNA OF THE ALPINE REGIONS IN THE GREAT CAUCASUS OF GEORGIA.] In: (Fauna of the alpine regions of the Great Caucasus within the limits of Georgia.) Metsniereba (Tiflis). p. 175-198. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 81247. Transl. of Russian abstr.] WR 123: 9

SHREWS, MOLES, BATS

Adams, Devil B., and George M. Baer. CESARIAN SECTION AND ARTIFICIAL FEEDING DEVICE FOR SUCKLING BATS. J. Mammal. 47(3): 524-525, 1 fig. Aug. 1966. WR 123: 9
[U.S. Public Health Serv. Communicable Disease Center, Southwest Rabies Invest. Sta., University Park, N. Mex.]

Bruce, David S., and Jacob E. Wiebers. TISSUE OXYGEN CONSUMPTION IN THE HIBERNATING AND ACTIVE BAT MYOTIS LUCIFUGUS. Physiol. Zoöl. 39(3): 237-243, 1 fig. July 1966. WR 123: 9
[Purdue Univ., Lafayette, Ind.]

Cena, K., and B. W. Wołoszyn. INVESTIGATIONS ON THE DIURNAL CHANGES OF THE SKIN TEMPERATURE IN BATS. Folia Biologica 14(2): 195-203, 5 figs. 1966. In English with Polish and Russian summ. WR 123: 9
[Dept. Zool., Agr. Coll., Wrocław, Poland.]

Davis, Wayne H. POPULATION DYNAMICS OF THE BAT PIPISTRELLUS SUBFLAVUS. J. Mammal. 47(3): 383-396, 3 figs. Aug. 1966. WR 123: 9
[Univ. Ky., Lexington.] Abstract: Populations of pipistrels hibernating in two West Virginia caves were studied over a 14-year period. Methods are developed for determining the percentages of surviving bats not recaptured in the caves, the annual survival percentages, survival rates for each sex and age group and the structure of the populations by age and sex. Sex ratios observed in the caves, which fluctuate between 69.5% and 85.1% males, do not show the sex ratio of the species; analysis of survival rates indicates that the true sex ratio is 61♂♂:39♀♀. Life tables are presented for the species and for random cohorts of adults. Annual survival rates are different for each age group. Survival is low in youngest bats, climbs to a peak at 3.5 years and then decreases, falling rapidly as maximum life span is approached.

Davis, Wayne H., and Mark M. Luckens. USE OF BIG BROWN BATS (EPTESICUS FUSCUS) IN BIOMEDICAL RESEARCH. Lab. Animal Care 16(3): 224-227. June 1966. WR 123: 9
[Univ. Ky., Lexington.]

Davis, William B. REVIEW OF SOUTH AMERICAN BATS OF THE GENUS EPTESICUS. Southwestern Nat. 11(2): 245-274, 5 figs. 30 June 1966. WR 123: 9
[Texas A & M Univ., College Station.]

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Fenton, M. Brock. MYOTIS SODALIS IN CAVES NEAR WATERTOWN, NEW YORK. J. Mammal. 47(3): 526. Aug. 1966. WR 123: 10
[Royal Ontario Museum, Toronto, Canada.]

Henshaw, Robert E., and G. Edgar Folk, Jr. RELATION OF THERMOREGULATION TO SEASONALLY CHANGING MICROCLIMATE IN TWO SPECIES OF BATS (MYOTIS LUCIFUGUS AND M. SODALIS). Physiol. Zool. 39(3): 223-236, 5 figs. July 1966. WR 123: 10
[Carnegie Inst. Technol., Pittsburgh, Pa.]

Huibregtse, William H. SOME CHEMICAL AND PHYSICAL PROPERTIES OF BAT MILK. J. Mammal. 47(3): 551-554, 2 figs. Aug. 1966. WR 123: 10
[Univ. Wash., Seattle.]

Long, Charles A., and Carolyn J. Jones. VARIATION AND FREQUENCY OF OCCURRENCE OF THE BACULUM IN A POPULATION OF MEXICAN FREE-TAILED BATS. Southwestern Nat. 11(2): 290-295. 30 June 1966. WR 123: 10
[Univ. Ill., Urbana.]

Marinovich, A. [PRESERVATION OF DESMANS.] Okhota & Okhotnich'e Khoz. 6: 17. 1959. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1960, no. 28446. Transl. of Russian abstr.] WR 123: 10

Maser, Chris. NOTES ON A CAPTIVE SOREX VAGRANS. Murrelet 47(2): 51-53, 1 fig. May-Aug. 1966. WR 123: 10
[Oreg. State Univ., Corvallis.] In captivity for 112 days.

Pedersen, Richard. NESTING BEHAVIOR OF TOWNSEND'S MOLE. Murrelet 47(2): 47-48. May-Aug. 1966. WR 123: 10
[Bend, Oreg.]

Pokropus, Edward J., and Benjamin H. Banta. OBSERVATIONS ON TWO COLORADO SHREWS IN CAPTIVITY. Wasmann J. Biol. 24(1): 75-81, 1 fig. Spring 1966. WR 123: 10
[Colorado Springs, Colo.] "Sorex cinereus and Cryptotis parva."

Rust, Charles C. NOTES ON THE STAR-NOSED MOLE (CONDYLURA CRISTATA). J. Mammal. 47(3): 538. Aug. 1966. WR 123: 10
[Univ. Wis. Center, Janesville.]

Stones, Robert C., and Jacob E. Wiebers. BODY WEIGHT AND TEMPERATURE REGULATION OF MYOTIS LUCIFUGUS AT A LOW TEMPERATURE OF 10° C. J. Mammal. 47 (3): 520-521, 1 fig. Aug. 1966. WR 123: 10
[Mich. Technol. Univ., Houghton.]

Tenaza, Richard R. MIGRATION OF HOARY BATS ON SOUTH FARALLON ISLAND, CALIFORNIA. J. Mammal. 47(3): 533-535. Aug. 1966. WR 123: 10
[San Francisco State Coll., San Francisco, Calif.]

RABBITS & PIKAS

Alkon, Philip U. SOME EFFECTS OF WEATHER AND OTHER INFLUENCES ON SUMMER ROADSIDE COUNTS OF COTTONTAILS. N.Y. Fish & Game J. 12(2): 180-190. July 1965. WR 123: 10
[N.Y. Conserv. Dept., Albany.] Abstract: The effect of certain weather conditions and other environmental factors on early-morning roadside counts of cottontail rabbits was studied in July each year from 1958 to 1963 on four routes consisting largely of secondary roads in Albany County. Rain, heavy fog and winds 8 m.p.h. or higher reduced counts significantly. Other forms of precipitation, as well as temperature and light, had less effect. Little or no relation was found between counts and barometric pressure, relative humidity, cloud cover, wetness of the road surface, or the number of predators or vehicles encountered. On one route surveyed three times each morning, counts were consistently highest on second runs (begun nearly one hour after sunrise).

Appleman, Robert M. A DEVICE FOR RESTRAINING RABBITS. Lab. Animal Care 16 (3): 300-303, 3 figs. June 1966. WR 123: 11
[Univ. Minn., Rochester.] Construction and use of a restraining board and a Vinylite sling for restraining rabbits.

Bernshtein, A. D., and G. A. Klevezal'. [AGE DETERMINATION OF OCHOTONA RUTILA AND OCHOTONA MACROTIS.] Zool. Zhur. 44(5): 787-789, illus. 1965. [From Biol. Abstr. 47(9), 1966. In Russian with English summ.] WR 123: 11
[Acad. Sci. Kaz. SSR, Alma-Ata, USSR.]

Caldwell, Larry D. MARSH RABBIT DEVELOPMENT AND ECTOPARASITES. J. Mammal. 47(3): 527-528, 1 fig. Aug. 1966. WR 123: 11
[Central Mich. Univ., Mt. Pleasant.]

Chang, M. C. ARTIFICIAL INSEMINATION OF SNOWSHOE HARES (LEPUS AMERICANUS) AND THE TRANSFER OF THEIR FERTILIZED EGGS TO THE RABBIT (ORYCTOLAGUS CUNICULUS). J. Reprod. Fertil. 10(3): 447-449. 1965. [From Biol. Abstr. 47(10), 1966.] WR 123: 11
[Worcester Found. Exptl. Biol., Shrewsbury, Mass.]

Forcum, Donald L. POSTPARTUM BEHAVIOR AND VOCALIZATIONS OF SNOWSHOE HARES. J. Mammal. 47(3): 543. Aug. 1966. WR 123: 11
[Univ. Wis., Madison.]

Franklin, John, M. L. Simmons, and G. E. Cosgrove. A PATHOGEN SURVEY IN THE KANSAS COTTONTAIL. Bull. Wildl. Disease Assoc. 2(3): 52-53. July 1966. WR 123: 11
[Oak Ridge Natl. Lab., Oak Ridge, Tenn.]

Gubarev, V. A. [THE STATIONARY DISTRIBUTION OF THE EUROPEAN HARE IN THE LATVIAN SSR.] In: (Conferences I and II on zoological gardens, 1961-1962.) Rizhskii Zool. Sad (Riga). p. 139-144. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 7I246. Transl. of Russian abstr.] WR 123: 11

Helminen, Matti, Kyösti Valanne, Anna Pirkola, and Ilkka Stén. METSÄJÄNIKSEN JA RUSAKON KESÄRAVINNOSTA. [SUMMER FEEDING HABITS OF THE MOUNTAIN HARE (LEPUS TIMIDUS) AND OF THE BROWN HARE (L. EUROPAEUS).] Suomen Riista 18: 133-144, 4 figs. 1966. In Finnish with English summ. WR 123: 11

Keith, Lloyd B., and E. C. Meslow. ANIMALS USING RUNWAYS IN COMMON WITH SNOWSHOE HARES. J. Mammal. 47(3): 541. Aug. 1966. WR 123: 11
[Univ. Wis., Madison.] Eleven spp. of mammals and seven spp. of birds were captured in the runways.

Marston, J. H., G. Rand, and M. C. Chang. THE CARE, HANDLING AND ANESTHESIA OF THE SNOWSHOE HARE (LEPUS AMERICANUS). Lab. Animal Care 15(5): 325-328. Oct. 1965. WR 123: 11
[Worcester Foundation Exptl. Biol., Shrewsbury, Mass.] Abstract: The methods of management, handling and anesthesia of the snowshoe hare (Lepus americanus) used in experiments to study hybrid fertilization have been described. With quiet and gentle handling these wild animals will adapt to the laboratory environment and thrive.

Mead-Briggs, A. R., and A. M. Hughes. RECORDS OF MITES AND LICE FROM WILD RABBITS COLLECTED THROUGHOUT GREAT BRITAIN. Annals & Magazine Nat. Hist. 8 (95&96): 695-708. Nov. & Dec. 1965. WR 123: 11
[Min. Agr., Fisheries & Food, Tangley Place, Worplesdon, Guildford, Surrey, England.] Specimens of thirty-three species of mites (Acari) and of one species of louse (Anoplura) were taken from a collection of 374 wild rabbits (Oryctolagus cuniculus).--From summ.

Birkenholz, Dale E. MOVEMENT AND DISPLACEMENT IN THE RICE RAT. Quart. J. Fla. Acad. Sci. 26(3): 269-274. 1963. [From Biol. Abstr. 47(10), 1966.] WR 123: 12
[Ill. State Univ., Normal.]

Blus, Lawrence J. RELATIONSHIP BETWEEN LITTER SIZE AND LATITUDE IN THE GOLDEN MOUSE. J. Mammal. 47(3): 546-547. Aug. 1966. WR 123: 12
[Thedford, Nebr.]

Brown, Larry N. REPRODUCTION OF PEROMYSCUS MANICULATUS IN THE LARAMIE BASIN OF WYOMING. Am. Midland Nat. 76(1): 183-189, 1 fig. July 1966. WR 123: 12
[Univ. Wyo., Laramie.] Abstract: The seasonal reproductive cycle of the deer mouse, Peromyscus maniculatus nebrascensis, was studied for 15 months in the Laramie Basin of southeastern Wyoming. Females exhibited one annual breeding season from April through August 1964. Peak reproductive activity occurred in May and June when more than 90% of adult females were pregnant or lactating. The average numbers of corpora lutea and embryos in females taken in April and May were significantly smaller than the mean numbers in June and July 1964. The overall mean number of corpora lutea per breeding female was 5.57 ± 0.41. Indicated embryonic loss during gestation ranged from 8.8-9.5%. Total litter resorption did not occur. Transmigration of embryos from one uterine horn to the other occurred in a minimum of 25.2% of litters. Females showed a synchrony of timing in the occurrences of the first and second pregnancies at the onset of the breeding season in April and May 1964. A complete cycle of testis development occurred once annually in adult P. maniculatus as indicated by testis length and weight, histology, and seminal vesicle length. Minimal activity of the testis occurred in December 1963. This was followed by a slow but continuous increase in testis development to a peak activity in June 1964. A sharp decline occurred in August and continued through November. Regression of testicular activity and resumption of spermatogenesis did not occur in a synchronous manner in adult males. The annual reproductive cycle of P. maniculatus on the Laramie Plains coincided rather closely with the annual photoperiod cycle in Wyoming. Probably increasing day lengths in spring initiate breeding activity and decreasing photoperiods in late summer and fall are a factor in terminating it.

Chipman, Robert K. COTTON RAT AGE CLASSES DURING A POPULATION DECLINE. J. Mammal. 47(1): 138-141. Feb. 1966. WR 123: 12
[Univ. Vt., Burlington.]

Chipman, R. K., and K. A. Fox. OESTROUS SYNCHRONIZATION AND PREGNANCY BLOCKING IN WILD HOUSE MICE (MUS MUSCULUS). J. Reprod. Fertil. 12: 233-236. 1966. WR 123: 12
[Univ. Vt., Burlington.]

Chitty, Dennis, and Ellen Phipps. SEASONAL CHANGES IN SURVIVAL IN MIXED POPULATIONS OF TWO SPECIES OF VOLE. J. Animal Ecol. 35(2): 313-331, 2 figs. June 1966. WR 123: 12
[Univ. British Columbia, Vancouver, Canada.]

Clark, Lincoln D. BEHAVIORAL CHARACTERISTICS OF THE ORANGE-TAN MUTANT OF PEROMYSCUS MANICULATUS SONORIENSIS. J. Mammal. 47(3): 522-523, 1 fig. Aug. 1966. WR 123: 12
[Univ. Utah, Salt Lake City.]

de Kock, L. L., and A. E. Robinson. OBSERVATIONS ON A LEMMING MOVEMENT IN JÄMTLAND, SWEDEN, IN AUTUMN 1963. J. Mammal. 47(3): 490-499, 1 fig. Aug. 1966. WR 123: 12
[Marischal Coll., Aberdeen, Scotland.] Abstract: Field observations were made of a lemming eruption in Jämtland, Sweden, in 1963. A typical mountain habitat, a place along the migration route, and the tip of a peninsula where

the movement was finally halted were visited. There was no evidence of excess numbers of lemmings in the first area. Masses of lemmings had, over a period of several weeks, passed through the second area and some were still present. The vegetation was not depleted, nor was there evidence of mass mortality. In contrast, the third area had a high lemming density, depleted pastures and high mortality by drowning. Details are given of distribution of animals in different regions and the corresponding behavior patterns. Animals on the move appeared to follow routes of previous migrants. They always moved as individuals and not in groups. An exceptional incident of shoreline "massing" is described.

Gentry, John B. INVASION OF A ONE-YEAR ABANDONED FIELD BY PEROMYSCUS POLIONOTUS AND MUS MUSCULUS. J. Mammal. 47(3): 431-439, 2 figs. Aug. 1966. WR 123: 13

[Savannah River Ecol. Lab., SROO, P. O. Box A, Aiken, S.C.] Abstract: Populations of Peromyscus polionotus and Mus musculus following invasion of a 9-acre cornfield abandoned for one year were inversely related. This inverse relationship, plus differences in habitat utilization, suggested interaction between the two species of rodents. Results showed that the interaction between populations of P. polionotus and M. musculus, observed by Caldwell (1964) and Caldwell and Gentry (1965) in fenced enclosures, may also occur in a natural situation where emigration and immigration are present. The P. polionotus population reached a peak in September 1963 and gradually declined to an unusually low level by February 1964. It is speculated that the quantity and quality of available food may have been a significant influence on the old-field mouse population and that M. musculus reacted opportunistically when the P. polionotus population declined. Whether this interaction was competition for food or space, aggressive competition between individuals or a more subtle relationship could not be determined.

Golenishchev, N. N. [THE EFFECTS OF INSUFFICIENT NUTRITION DURING EARLY ONTOGENESIS ON THE SUBSEQUENT DEVELOPMENT OF THE FIELD VOLE UNDER OPTIMUM CONDITIONS.] Trudy Vses. Nauchn.-Issled. Inst. Zashchity Rast. 12: 93-99. 1958. [From Biol. Abstr. 47(13), 1966, from Referat. Zhur., Biol., 1960, no. 76790. Transl. of Russian abstr.] WR 123: 13

Hayden, P., J. J. Gambino, and R. G. Lindberg. LABORATORY BREEDING OF THE LITTLE POCKET MOUSE, PEROGNATHUS LONGIMEMBRIS. J. Mammal. 47(3): 412-423, 3 figs. Aug. 1966. WR 123: 13

[Northrop Space Labs., Hawthorne, Calif.]

Horváth, Otto. OBSERVATION OF PARTURITION AND MATERNAL CARE OF THE BUSHY-TAILED WOOD RAT (NEOTOMA CINEREA OCCIDENTALIS BAIRD). Murrelet 47(1): 6-8, 2 figs. Jan.-Apr. 1966. WR 123: 13

[Univ. British Columbia, Vancouver, Canada.]

Macpherson, A. H. THE ABUNDANCE OF LEMMINGS AT ABERDEEN LAKE, DISTRICT OF KEEWATIN, 1959-63. Canadian Field-Nat. 80(2): 89-94, 3 figs. Apr.-June 1966. WR 123: 13

[Canadian Wildl. Serv., Ottawa.]

Orr, Howard D. BEHAVIOR OF TRANSLOCATED WHITE-FOOTED MICE. J. Mammal. 47 (3): 500-506, 1 fig. Aug. 1966. WR 123: 13

[St. Olaf Coll., Northfield, Minn.] Abstract: White-footed mice, Peromyscus leucopus, were held in hardware cloth cages to determine the effects of confinement on dispersal tendencies following translocation. Groups of 10 adult subjects each were released on a 30-acre peninsula. Location and movements of released subjects were determined by trapping for a 7-day period. Dispersal of groups confined at the site of release did not differ greatly from those confined indoors. Differences between a 1-week and a 3-week confinement period were not significant. Thirty per cent of the individuals remained in the release area for 7 days regardless of time or

location of confinement. Ninety per cent of a group held at the release site for 3 weeks and given access to a 20-foot runway remained in the area. Such treatment could prove useful when translocation is desirable, and serve as a method for analyzing the process of home range development.

Petrov, O. V. [IMPORTANCE OF FOREST GULLIES IN THE LIFE OF MURID RODENTS (MURIDAE) IN FOREST-STEPPE OAK WOODS.] Vestnik Leningr. Univ. Ser. Biol. 20 (2): 26-32. 1965. [From Biol. Abstr. 47(12), 1966. In Russian with English summ.] WR 123: 14

Pohl, H. CIRCADIANE PERIODIK IM WINTERSCHLAF. [CIRCADIAN PERIODISM DURING HIBERNATION (GLIS GLIS, DORMOUSE).] Naturwissenschaften 52(10): 269, illus. 1965. [From Biol. Abstr. 47(10), 1966. In German.] WR 123: 14
[Max Planck Inst. Verhaltensphysiol., Erling-Andechs, Germany.]

Richens, Voit B. NOTES ON THE DIGGING ACTIVITY OF A NORTHERN POCKET GOPHER. J. Mammal. 47(3): 531-533, 1 fig. Aug. 1966. WR 123: 14
[Bur. Sport Fisheries & Wildl., Box C, Davis, Calif.] "Thomomys talpoides."

Rickard, W. H., and R. E. Nakatani. THE LENGTH OF DEERMICE IN RELATION TO NATURAL VEGETATION BELTS IN SOUTHEASTERN WASHINGTON AND NORTHERN IDAHO. Murrelet 47(2): 49-50. May-Aug. 1966. WR 123: 14
[Battelle Memorial Inst. Pacific Northwest Lab., Richland, Wash.]

Schwab, Robert George. ENVIRONMENTAL FACTORS AFFECTING SURFACE ACTIVITY OF THE KANGAROO RAT (DIPODOMYS MERRIAMI). Ph.D. thesis, Univ. Ariz. 76 p. 1966. [From abstr. in Dissertation Abstr. 26(11), 1966.] WR 123: 14
"Light intensity appears to trigger the initiation of surface activity of this nocturnal rodent. The data suggest that temperature related factors are more important than light intensity with respect to termination of surface activity.... Kangaroo rats were active above ground over a wide range of air temperature, relative humidity, barometric pressure, and wind velocity. These factors had no apparent relationship to the intensity of surface activity. There was no deviation from the normal pattern of activity during two nights when fog conditions prevailed and one night when a dry, flaky snowfall occurred. A moderate or heavy rainfall may cause a pronounced change in time of initiation, time of termination, and level of surface activity. Bright moonlight causes a change of behavior but not a change in the intensity of surface activity for this species of kangaroo rat."

Sheppe, Walter. SOCIAL BEHAVIOR OF THE DEER MOUSE, PEROMYSCUS LEUCOPUS, IN THE LABORATORY. Wasmann J. Biol. 24(1): 49-65, 1 fig. Spring 1966. WR 123: 14
[Calif. Acad. Sci., San Francisco.] Groups of 2-5 deer mice always established a hierarchical social structure when kept in an observation pen 6 feet square. Typically males were dominant over females, resident males were dominant over newcomers, and larger males over smaller ones.--From abstr.

Thiele, H. U. NEUE BEOBACHTUNGEN ZUM RATSEL DER LEMMINGWANDERUNGEN. [RECENT OBSERVATIONS ON THE PUZZLE OF LEMMING MIGRATIONS.] Naturwiss. Rundsch. 18(4): 156-157. 1965. [From Biol. Abstr. 47(13), 1965. In German.] WR 123: 14

Tucker, Vance A. DIURNAL TORPOR AND ITS RELATION TO FOOD CONSUMPTION AND WEIGHT CHANGES IN THE CALIFORNIA POCKET MOUSE PEROGNATHUS CALIFORNICUS. Ecology 47(2): 245-252, 5 figs. Early Spring 1966. WR 123: 14
[Duke Univ., Durham, N.C.] P. californicus undergoes a daily period of torpor if its food supply is reduced below its ad libitum consumption. At an ambient temperature of 15° C, 17 g of bird seed per 100 g body weight is required each day to maintain weight in the absence of torpor. If this food ration is reduced, mice on a 12-hr photoperiod with lights on from 0600 to 1800 hr enter torpor between 2000 and 0500 hr and allow their body temperatures to drop to about 16° C. The earlier times of entry into torpor are associated

with smaller food rations. Since the mean time of arousal is between 1100 and 1330 hr on all food rations, the duration of the torpor period increases as the food ration decreases. The torpor period in the laboratory may encroach on the nightly activity period and decrease the total activity of mice on rationed food.--From abstr. Courtesy/ Paul A. Stewart.

Whitaker, John O., Jr. FOOD OF MUS MUSCULUS, PEROMYSCUS MANICULATUS BAIRDI AND PEROMYSCUS LEUCOPUS IN VIGO COUNTY, INDIANA. J. Mammal. 47(3): 473-486. Aug. 1966. WR 123: 15

[Ind. State Univ., Terre Haute.] Abstract: The foods of 478 house mice, Mus musculus, 444 prairie deer mice, Peromyscus maniculatus bairdi, and 278 white-footed mice, Peromyscus leucopus, are analyzed by the habitat of each species and by season. The more important foods of the house mouse were Setaria seeds, lepidopterous larvae, corn, various weed seeds, various animal materials and cultivated crops (corn, wheat, soybeans and sorghum). Among the more important foods of Peromyscus maniculatus bairdi were lepidopterous larvae, wheat seeds, soybeans, weed seeds, animal materials and cultivated foods, especially wheat and soybeans. The more important foods of Peromyscus leucopus were various kinds of seeds, lepidopterous larvae and mast; cultivated foods were not important. Peromyscus leucopus differed in habitat, hence in food habits, from the other two species. Peromyscus maniculatus bairdi and Mus musculus occupied similar habitats and might be expected to eat similar foods; this was not always the case. Seeds of Setaria were heavily eaten by Mus but were usually much less important to P. m. bairdi. In soybean fields, soybeans were heavily eaten by P. m. bairdi but not by Mus; in wheat fields, wheat seeds were much more heavily eaten by Mus than by P. m. bairdi. In cornfields, corn was much more important to Mus than to P. m. bairdi.

RATTUS AND MUS

Ford-Robertson, J. de C., and P. C. Bull. SOME PARASITES OF THE KIORE, RATTUS EXULANS, ON LITTLE BARRIER AND HEN ISLANDS, NEW ZEALAND. New Zealand J. Sci. 9(1): 221-224. Mar. 1966. WR 123: 15

[Animal Ecol. Div., DSIR, Lower Hutt, New Zealand.]

Sheppe, Walter. PERIODONTAL DISEASE AND SUPERNUMERARY TEETH IN A POPULATION OF MUS MUSCULUS. J. Mammal. 47(3): 519-520. Aug. 1966. WR 123: 15

[Calif. Acad. Sci., San Francisco.]

Tomich, P. Quentin, and Harry T. Kami. COAT COLOR INHERITANCE OF THE ROOF RAT IN HAWAII. J. Mammal. 47(3): 423-431. Aug. 1966. WR 123: 15

[Plague Res. Unit, State Health Dept., Honokaa, Hawaii.]

SCIURIDS

Bachurikhina, L. S. [DEFENSIVE CONDITIONED REFLEXES TO POISONED BAITS IN THE SMALL MARMOT (CITELLUS PYGMAEUS) AND THE GRAY RAT (RATTUS NORVEGICUS.) Trudy Vses. Inst. Zashchity Rast. 10: 17-34. 1958. [From Biol. Abstr. 47(13), 1966, from Referat. Zhur., Biol., 1959, no. 44775. Transl. of Russian abstr.] WR 123: 15

Balph, D. M., and D. F. Balph. SOUND COMMUNICATION OF UINTA GROUND SQUIRRELS. J. Mammal. 47(3): 440-450, 2 figs. Aug. 1966. WR 123: 15

[Utah State Univ., Logan.] Abstract: The purpose of this study was to catalog the calls given by Uinta ground squirrels, Citellus armatus, and to determine the cause and function of each. Spectrographic analysis permitted graphic descriptions and quantitative comparisons of the sounds. Records of the behavior of animals before and after each call, as well as the environmental situation, were the basis for determining the causes and functions of these signals. The squirrels produced six different calls: chirp, churr,

squeal, squawk, teeth-clatter and growl. They used all the calls in agonistic behavior. An attack, approach or sight of another animal nearby elicited most of the calls. The signals functioned to intimidate others or to inhibit them from moving closer. Squirrels chirped in response to airborne predators and churred in response to ground predators. Spectrographic analysis indicated that these were the same calls the squirrels used in intraspecific threat. Their system of sound communication was simple and unspecific. Its primary use seemed to be as a general attention-getter. Perhaps relying on visual and scent communication and living in relatively open habitat promoted the development of their generalized system of sound communication.

Boyd, C. E., B. D. Hudgins, R. D. Oglesby, and W. T. Wright. WATCH IN THE DEVIL'S POCKET. Texas Parks & Wildl. (formerly Texas Game & Fish) [24](1): 7-9, illus. Jan. 1966. WR 123: 16
Results are given for the managed squirrel hunts of the Devil's Pocket Area [Newton County] for the period 1961-1965. Limited information was collected on a 3-day mid-February hunt.

Brink, C. Holden, and Frederick C. Dean. SPRUCE SEED AS A FOOD OF RED SQUIRRELS AND FLYING SQUIRRELS IN INTERIOR ALASKA. J. Wildl. Mgmt. 30(3): 503-512, 6 figs. July 1966. WR 123: 16
[Alaska Coop. Wildl. Res. Unit, College.] Abstract: Feeding trials conducted from November, 1962, through June, 1963, in an outdoor enclosure on the University of Alaska campus revealed that red squirrels (Tamiasciurus hudsonicus) can survive for 3 weeks and possibly longer on nothing but white spruce (Picea glauca) seeds. Under such conditions they consume about 144 cones per day per squirrel. Flying squirrels (Glaucomys sabrinus) do poorly on white spruce seeds and, unlike red squirrels, probably do not consume large quantities of them in the wild. Red squirrels lose weight rapidly when given nothing but black spruce (Picea mariana) cones and show a marked preference for white spruce cones over black spruce cones, possibly because white spruce seeds are larger and have higher caloric content. Red squirrels scatter about one filled seed for every two cones they strip, but it is unlikely that many of these scattered seeds successfully germinate.

Gladkina, T. S. [SOME REGULARITIES IN THE RESTORATION PATTERN OF SMALL SUSLIK NUMBER ON TERRITORIES IN WHICH GRAIN BAIT TREATED WITH ZINC PHOSPHIDE HAD BEEN SET.] Trudy Vses. Nauchn.-Issled. Inst. Zashchity Rast. 12: 168-188. 1958. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1960, no. 50808. Transl. of Russian abstr.] WR 123: 16

Kizilov, V. A., and N. I. Semenova. [ACTIVITY, MOBILITY AND CONTACT WITH UNINHABITATED BURROWS BY THE LONG-TAILED MARMOT (MARMOTA CAUDATA).] Zool. Zhur. 43(12): 1855-1860, illus. 1964. [From Biol. Abstr. 47(9), 1966. In Russian with English summ.] WR 123: 16

Mokeeva, T. M., and E. D. Skholi'. [SPECIFIC CHARACTERISTICS OF SMALL SUSLIK NUTRITION IN THE UKRAINE AND WESTERN KAZAKHSTAN.] Trudy Vses. Nauchn.-Issled. Inst. Zashchity Rast. 12: 51-73. 1958. [From Biol. Abstr. 47(13), 1966, from Referat. Zhur., Biol., 1960, no. 56105. Transl. of Russian abstr.] WR 123: 16

Moore, Joseph Curtis, and George H. H. Tate. A STUDY OF THE DIURNAL SQUIRRELS, SCIURINAE, OF THE INDIAN AND INDOCHINESE SUBREGIONS. Fieldiana: Zool. 48: 3-351, illus. 1965. [From Biol. Abstr. 47(11), 1966.] WR 123: 16
[Chicago Nat. Hist. Museum, Chicago, Ill.]

Reynolds, Hudson G. ABERT'S SQUIRRELS FEEDING ON PINYON PINE. J. Mammal. 47(3): 550-551. Aug. 1966. WR 123: 16
[Rocky Mountain Forest & Range Expt. Sta., Tempe, Ariz.]

SCIURIDS--Continued

Rigg, Lee Allen. LEVELS OF PROTHROMBIN COMPLEX FACTORS DURING A CIRCADIAN CYCLE IN COAGULATION TIME IN THE CHIPMUNK (EUTAMIAS QUADRIVITTATUS). Ph.D. thesis, Univ. Colo. 141 p. 1965. [From Dissertation Abstr. 26(11), 1966.] WR 123: 17

Serzhanin, Yu. I. [EFFECT OF INDUSTRY ON THE SEX AND AGE COMPOSITION OF POPULATIONS OF SQUIRRELS (SCIURUS VULGARIS) IN BELORUSSIA.] Vyestsi Akad. Navuk Byelorussk SSR Syeryya Biyalahichnykh Navuk 2: 116-118. 1965. [From Biol. Abstr. 47(12), 1966.] WR 123: 17

Shackelford, Nevyle. EASTERN CHIPMUNK FEEDING ON A STARLING. J. Mammal. 47(3): 528. Aug. 1966. WR 123: 17
[Beattyville, Ky.]

Shellhammer, Howard S. CONE-CUTTING ACTIVITIES OF DOUGLAS SQUIRRELS IN SEQUOIA GROVES. J. Mammal. 47(3): 525-526. Aug. 1966. WR 123: 17
[San Jose State Coll., San Jose, Calif.]

Wolfe, James L. AGONISTIC BEHAVIOR AND DOMINANCE RELATIONSHIPS OF THE EASTERN CHIPMUNK, TAMIAS STRIATUS. Am. Midland Nat. 76(1): 190-200, 2 figs. July 1966. WR 123: 17
[Univ. Ala., University.] Abstract: Five hundred seventeen agonistic encounters were observed between a total of 19 eastern chipmunks (Tamias striatus) in large outdoor cages. Encounters were classified as threats, chases, or fights, and the components of each are described in detail. The chipmunks exhibited a clear-cut, stable chase order which seemed more consistently correlated with size than with sex. The total number of encounters in which an animal was involved varied directly with rank. Mortality due to fighting occurred on 11 occasions. The individual killed was invariably low in the dominance order, even though the lower ranking animals were involved in fewer encounters than higher ranking ones. The dominance hierarchy apparently did not function to reduce the number or severity of encounters in the cage. Agonistic behavior observed in the field during the summers of 1964 and 1965 was qualitatively similar to that observed in the caged animals.

BEAVER

Fomicheva, N. I. [FOOD OF THE RIVER BEAVER IN SPRING AND SUMMER.] Trudy Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya & Pushniny 17: 117-122. 1958. [From Biol. Abstr. 47(13), 1966, from Referat. Zhur., Biol., 1959, no. 76181. Transl. of Russian abstr.] WR 123: 17

Lahti, Seppo. MAJAVAN RAVINNONVALINNASTA JA RAVINNON KAYTOSTA. [ON THE FOOD HABITS OF THE BEAVER (CASTOR SPP.) IN NORTHERN FINLAND.] Suomen Riista 18: 7-19, 4 figs. 1966. In Finnish with English summ. WR 123: 17
Betula pubescens, Populus tremula and Sorbus aucuparia were preferred items; Salix caprea and Alnus incana were also consumed but conifers were not touched.--From summ.

Lavrov, L. S., V. A. Romashov, G. Danzan, and T. Tsevegzhav. [ECOLOGICAL FEATURES OF THE HABITAT AND THE OUTLOOK FOR DEVELOPMENT OF SOUTH ASIAN BEAVER (CASTOR FIBER BIRULAE) COLONIES IN THE BULGAN RIVER.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 70(2): 25-33, illus. 1965. [From Biol. Abstr. 47(11), 1966. In Russian with English summ.] WR 123: 17

Layne, James N., and Bette S. Johns. PRESENT STATUS OF THE BEAVER IN FLORIDA. Quart. J. Fla. Acad. Sci. 28(2): 212-220. 1965. [From Biol. Abstr. 47(9), 1966.] WR 123: 17
[Cornell Univ., Ithaca, N.Y.]

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MUSKRAT AND NUTRIA

Anderson, D. R., and R. L. Beaudoin. HOST HABITAT AND AGE AS FACTORS IN THE PREVALENCE OF INTESTINAL PARASITES OF THE MUSKRAT. Bull. Wildl. Disease Assoc. 2(3): 70-76, 3 figs. July 1966. WR 123: 18

[Colo. State Univ., Fort Collins.] Abstract: Muskrats (Ondatra zibethicus) collected from three different habitats: river, marshes and streams were examined for helminth parasites. Muskrats were aged by a lens-weight technique. Using the age specific prevalence, transmission rates for Wardius zibethicus, Quinqueserialis quinqueserialis, Echinostomum revolutum and the strobilocercus state of Hydatigera taeniaeformis were constructed for stream muskrats. Parasite burdens and the occurrence of multiple infections increased with host age. Differences in prevalence between habitats were observed.

Pavlov, M. P. [ORGANIZING SPECIALIZED COMMERCIAL GAME FARMS.] Byul. Nauchn.-Tekh. Inform. Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya & Pushniny 1: 5-10. 1958. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1960, no. 2252. Transl. of Russian abstr.] WR 123: 18

"Myocastor coypu."

Pavlov, M. P. [STATE OF MUSKRAT (ONDATRA ZIBETHICA) STOCK AND METHODS FOR ENLARGING IT IN THE AMU-DAR'YA DELTA.] In: (Fish stock of the Aral Sea and methods for its rational utilization.) Nauka (Tashkent). p. 172-176. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 11234. Transl. of Russian abstr.] WR 123: 18

FUR ANIMALS, GENERAL

Zhdanov, A. P. [FUR HUNTING IN THE TOMSK REGION AND METHODS OF IMPROVING IT (COMMENTARIES ON THE WORK OF THE TOMSK GROUP OF THE WEST SIBERIAN EXPEDITION OF THE ALL-UNION RESEARCH INSTITUTE OF ANIMAL RAW MATERIALS AND FUR).] Vses. Byul. Nauchn.-Tekh. Inform. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya & Pushniny 3: 34-42. 1958. [From Biol. Abstr. 47(13), 1966, from Referat. Zhur., Biol., 1959, no. 84592. Transl. of Russian abstr.] WR 123: 18

BEARS

Bevilaqua, F. MEDVEDE ZO SLOVENSKEHO RUDOHORIA. [BEARS IN THE RODOHORY AREA, SLOVAKIA.] Ziva 13(6): 225-226, illus. 1965. [From Biol. Abstr. 47 (13), 1966. In Czech.] WR 123: 18

[Lesny Zavod, Hronec, Czechoslovakia.] In the mountains of the Rudohoria chain in Slovakia Ursus arctos has increased in numbers considerably in the past decade.

Hock, Raymond J., and Anna M. Larson. COMPOSITION OF BLACK BEAR MILK. J. Mammal. 47(3): 539-540. Aug. 1966, WR 123: 18

[Northrop Space Labs., Hawthorne, Calif.]

Uspenskii, S. M. [DISTRIBUTION, NUMBER, AND PRESERVATION OF THE WHITE POLAR BEAR (THALARCTOS MARITIMUS) IN THE ARCTIC.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 70(2): 18-24, map. 1965. [From Biol. Abstr. 47(11), 1966. In Russian with English summ.] WR 123: 18

RACCOON, RINGTAIL, COATI

Aliev, Farman Fatullaevich, and Glen C. Sanderson. DISTRIBUTION AND STATUS OF THE RACCOON IN THE SOVIET UNION. J. Wildl. Mgmt. 30(3): 497-502, 1 fig. July 1966. WR 123: 18

[Inst. Zool., Acad. Sci., Azerbaijan, SSR.] Abstract: The raccoon (Procyon lotor) was introduced into the USSR for its fur in 1936 although plans for introducing it were made as early as 1931. The first release of 22 raccoons

was made in a walnut forest (Juglans sp.) in Northern Fergana and Kirgiz. There were at least 10-12 raccoons in this area the following year. These animals reproduced successfully and increased in numbers, dispersing 40-50 km from the point of release. From 1936 through 1958, 1,243 raccoons were released in widely scattered areas in the USSR. The initial releases were of animals reared in zoos; subsequent releases were of raccoons live-trapped in various areas where introductions had been successful. It is estimated that the 1964 population of raccoons in the USSR was 40-45 thousand, with an additional 4-5 thousand in the Federal Republic of Germany. In the USSR the raccoon lives mainly in hardwood forests containing hollow trees and in orchards, but has occasionally been observed in mountain forests. They also sometimes use ground dens. Severe drought in Transcaucasia in 1951 caused extensive summer migrations of raccoons to forests as high as 3,500 meters above sea level. A snow cover averaging 130-135 days annually in parts of central USSR limits their survival in this area. However, successful adaptation to artificial dens indicates that the raccoon may become widely distributed in hardwood forests of the central zone of the USSR. Raccoons in the USSR have lost most of their North American parasites, but have acquired new species of endoparasites and ectoparasites. A few potential predators are present, but little information on predation is available.

Mech, L. David, John R. Tester, and Dwain W. Warner. FALL DAYTIME RESTING HABITS OF RACCOONS AS DETERMINED BY TELEMETRY. J. Mammal. 47(3): 450-466, 7 figs. Aug. 1966. WR 123: 19

[Univ. Minn., Minneapolis.] Abstract: The locations of 173 daytime resting sites of seven raccoons (Procyon lotor) in east central Minnesota were studied during September through November 1964. An automatic radio-tracking system was the main method employed to locate animals, although field checks with a portable receiver also provided data. Persistent field checks apparently disturbed one of the animals. Distributions of resting sites of four of the animals are illustrated, described and analyzed; all individuals generally shifted resting sites from day to day, but each used certain areas more frequently than others. Ground beds in cattail marshes and alder and cedar swamps were used almost exclusively as resting sites. Some individuals shifted resting sites as much as one mile from one day to the next. No apparent patterns or consistencies among individuals were found in the frequency distributions of distances between consecutive resting sites or of activity radii of the sites. Evidence is presented indicating that three individuals using the same general area seemed to maintain a certain minimum distance among the resting sites chosen by each on any given day.

Mech, L. David, and Frank J. Turkowski. TWENTY-THREE RACCOONS IN ONE WINTER DEN. J. Mammal. 47(3): 529-530. Aug. 1966. WR 123: 19

[Univ. Minn., Minneapolis.]

Winslow, D. J., D. L. Price, R. C. Neafie, and C. M. Herman. TRICHINOSIS IN MARYLAND RACCOONS. Bull. Wildl. Disease Assoc. 2(3): 81-82, 1 fig. July 1966. WR 123: 19

[Armed Forces Inst. Pathol., Washington, D.C.]

MUSTELIDS

Balser, Donald S., and William H. Longley. INCREASE OF THE FISHER IN MINNESOTA. J. Mammal. 47(3): 547-550, 1 fig. Aug. 1966. WR 123: 19

[Bur. Sport Fisheries & Wildl., Federal Center, Denver, Colo.]

Westman, Kai. MINKIN LEVINEISYYDESTÄ SUOMESSA. [OCCURRENCE OF FERAL AMERICAN MINKS (MUSTELA VISON) IN FINLAND.] Suomen Riista 18: 101-116, 5 figs. 1966. In Finnish with English summ. WR 123: 19

Zaleker, V. L., and A. V. Kondratov. [PRESENT CONDITION OF THE SABLE TRADE AND POSSIBILITIES FOR ITS DEVELOPMENT.] Byul. Nauchn.-Tekh. Inform. Vses. Nauchn.-Issled. Inst. Zhivotnykh Syr'ya & Pushniny 3: 13-18. 1958. [From Biol. Abstr. 47(13), 1966, from Referat. Zhur., Biol., 1959, no. 71928. Transl. of Russian abstr.] WR 123: 20

DOGS, WOLVES, FOXES

Belyaev, V. [WHITE FOX IN THE VICINITY OF KOMSOMOL'SK.] Okhota & Okhotnich'e Khoz. 4: 57. 1959. [From Biol. Abstr. 47(11), 1966, from Referat. Zhur., Biol., 1960, no. 56082. In Russian.] WR 123: 20

Bergman, Göran. SAARISTOMME KETUISTA. [OCCURRENCE AND LIVING HABITS OF THE FOX (VULPES VULPES) IN FINNISH ISLAND AREAS AND ITS EFFECT ON BIRDS.] Suomen Riista 18: 30-41, 3 figs. 1966. In Finnish with English summ. WR 123: 20

Konovalov, G. V., R. A. Kantorovich, I. A. Buzinov, and V. P. Riutova. EXPERIMENTAL INVESTIGATIONS INTO RAGE AND RABIES IN POLAR FOXES, NATURAL HOSTS OF THE INFECTION. II. AN EXPERIMENTAL MORPHOLOGICAL STUDY OF RABIES IN POLAR FOXES. Acta Virol. 9(3): 235-239. 1965. [From Biol. Abstr. 47(10), 1966.] WR 123: 20
[USSR Acad. Med. Sci., Moscow, USSR.]

Lord, Rexford D. GROWTH OF THE LENS OF THE PAMPAS GRAY FOX (DUSICYON GYMNOCERCUS ANTIQUUS) AND THE PATAGONIAN GRAY FOX (DUSICYON GRISEUS GRISEUS). J. Mammal. 47(3): 536-538, 2 figs. Aug. 1966. WR 123: 20
[U.S. Public Health Serv., Atlanta, Ga.]

Minckley, W. L. COYOTE PREDATION ON AQUATIC TURTLES. J. Mammal. 47(1): 137. Feb. 1966. WR 123: 20
[Ariz. State Univ., Tempe.] This article was wrongly attributed to Robert K. Chipman in WR 121: 29.

Österholm, Henrik. KAUKOAISTIEN MERKITYS KETUN RAVINNONETSINNÄSSÄ. [ROLE OF DISTANCE RECEPTORS IN THE FEEDING BEHAVIOUR OF THE FOX (VULPES VULPES).] Suomen Riista 18: 50-66, 9 figs. 1966. In Finnish with English summ. WR 123: 20

CATS

Ishunin, G. I. [BIOLOGY OF THE JUNGLE CAT (FELIS CHAUS CHAUS) IN SOUTHERN UZBEKISTAN.] Zool. Zhur. 44(4): 630-632. 1965. [From Biol. Abstr. 47(9), 1966. In Russian with English summ.] WR 123: 20
[Acad. Sci. Uz. SSR, Tashkent, USSR.]

van Zyll de Jong, C. G. PARASITES OF THE CANADA LYNX, FELIS (LYNX) CANADENSIS (KERR). Canadian J. Zool. 44(4): 499-509, 20 figs. July 1966. WR 123: 20
[Univ. Toronto, Toronto, Ontario, Canada.] Abstract: Monopsyllus vison was collected from 1 of 19 lynxes examined for ectoparasites. Taenia laticollis and T. rileyi were the most frequent cestodes in 113 lynxes examined for endoparasites. Scoleces of T. pisiformis were often present in large numbers, but no segmented specimens were encountered. Scoleces of Multiceps sp. were found twice. One trematode, Alaria (Paralaria) sp., was collected. The nematodes Toxascaris leonina, Cylicospirura subaequalis, and Troglostrongylus wilsoni were common, and Toxocara cati and Physaloptera praeputialis occurred less frequently.

BIG GAME, GENERAL

Aleksandrov, V., and S. Kalugin. [AUROCHS (EUROPEAN BISON) IN THE CAUCASUS.] Okhota & Okhotnich'e Khoz. 3: 25-26. 1959. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1959, no. 95621. Transl. of Russian abstr.] WR 123: 21

Anderson, Jeremy L. TOOTH REPLACEMENT AND DENTITION OF THE BLACK RHINOCEROS (DICEROS BICORNIS LINN.). Lammergeyer no. 6. p. 41-46, 2 figs., 2 pls. June 1966. WR 123: 21
[27 Natal Road, Avondale, Salisbury, Rhodesia.]

Andreev, V. [COUNTING REINDEER.] Okhota & Okhotnich'e Khoz. 4: 7-8. 1959. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1960, no. 35339. Transl. of Russian abstr.] WR 123: 21

Anonymous. [INCREASE AND REGULATION OF MOOSE NUMBERS (REVIEW OF NOTES AND DATA ACQUIRED BY THE EDITORIAL OFFICE).] Priroda 6: 100-102. 1959. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1960, no. 35386. Transl. of Russian abstr.] WR 123: 21

Apisov, D. I. [ELK IN TATAR AUTONOMOUS SSR.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 89-93. 1959. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1960, no. 45457. Transl. of Russian abstr.] WR 123: 21

Daniel, M. J. A PRELIMINARY SURVEY OF THE INCIDENCE OF BRUCELLOSIS, LEPTOSPIROSIS, AND SALMONELLOSIS IN RED DEER IN NEW ZEALAND. New Zealand J. Sci. 9(2): 399-408, 1 fig. June 1966. WR 123: 21
[Animal Ecol. Div., DSIR, Lower Hutt, New Zealand.] Summary: A sample of 109 unhaemolysed red deer sera collected from Kaingaroa Forest during 1963-65, gave an incidence of positive reactors to Brucella abortus of 0.9% at 1:40 and 2.7% suspicious at 1:20. When checked against a battery of eight leptospiral serotypes, 0.9% were positive for Leptospira pomona at 1:200 and 0.9% suspicious for L. andaman at 1:200. These sera were from animals shot on the western edge of the forest within a few miles of recent cases of bovine brucellosis and leptospirosis, suggesting that at some time the deer had been exposed to the organisms from one or more of these sources. Thirty faecal samples collected from shot deer were found to be negative for Salmonella spp., including those from four deer shot near recent cases of ovine salmonellosis caused by S. typhi-murium, S. bovis-morbificans, and S. cholerae-suis. These findings are compared with similar work on deer overseas, particularly in the United States. Hence red deer are probably of no significance in the epizootiology of brucellosis and leptospirosis in domestic stock in this country. Previous research done in New Zealand on parasites and diseases of introduced mammals is briefly mentioned and the possible implications of potential wildlife reservoirs of brucellosis, leptospirosis, salmonellosis, and foot and mouth disease are discussed. It is suggested that a reference bank of deep-frozen wildlife sera be collected and stored for future serological studies.

Deane, N. N. ECOLOGICAL CHANGES AND THEIR EFFECT ON A POPULATION OF REEDBUCK (REDUNCA ARUNDINUM (BODDAERT)). Lammergeyer no. 6. p. 2-8, 1 fig. June 1966. WR 123: 21
[Natal Parks, Game & Fish Preservation Board, Pietermaritzburg, South Africa.]

Geist, Valerius. VALIDITY OF HORN SEGMENT COUNTS IN AGING BIGHORN SHEEP. J. Wildl. Mgmt. 30(3): 634-635, 1 fig. July 1966. WR 123: 21
[Univ. British Columbia, Vancouver.] Abstract: Horn segment counts were compared with chronological age of 21 bighorn rams (Ovis canadensis) of known age, and were found to coincide.

Golovin, Yu. [WILD BOARS IN THE BELGOROD OBLAST.] Okhota & Okhotnich'e Khoz. 9: 61. 1958. [From Biol. Abstr. 47(13), 1966, from Referat. Zhur., Biol., 1959, no. 35232. Transl. of Russian abstr.] WR 123: 21

Hailey, T. L., Jack Ward Thomas, and R. M. Robinson. PRONGHORN DIE-OFF IN TRANS-PECOS TEXAS. J. Wildl. Mgmt. 30(3): 488-496, 2 figs. July 1966. WR 123: 22

[Texas Parks & Wildl. Dept., Marfa.] Abstract: Pronghorn antelope (Antilocapra americana) numbers on the Marfa Flat, comprising 75,000 acres in Presidio County, Texas, declined from 484 in June, 1964, to 148 in June, 1965. Nearly 60 percent (274) of the original number died from causes other than hunting. Pronghorns were confined on this area by net-wire fences. Three years of below-average rainfall combined with heavy stocking of cattle, horses, and pronghorns caused severe depletion and forced pronghorns to rely almost entirely on browse species for sustenance. Only tarbush (Flourensia cernua), creosotebush (Larrea divaricata), and snakeweed (Amphiachyris dracunculoides) were readily available. Twelve pronghorns were observed to be utilizing a diet composed almost entirely of tarbush during the winter and spring period. Lesions characteristic of tarbush toxicity were found in 83 percent of the animals examined. Resorbing embryos were found in three of four females that had conceived. Malnutrition coupled with tarbush toxicity was considered to be the cause of the losses. Reproductive rates were reduced from 52 fawns per 100 does in June, 1964, to 17 fawns per 100 does in June, 1965. Pronghorns on ranches with a variety of more desirable browse species suffered only minor losses. Adjustment of stocking rates to forage available, construction of fences allowing pronghorn movement during periods of food shortage, and the possibility of limited, temporary supplemental feeding are management practices that might prevent the recurrence of such losses.

Harper, James A., and William C. Lightfoot. TAGGING DEVICES FOR ROOSEVELT ELK AND MULE DEER. J. Wildl. Mgmt. 30(3): 461-466, 2 figs. July 1966. WR 123: 22

[Oreg. State Game Comm., Corvallis.] Abstract: Collars, earmarkers, and ear tags were attached to Roosevelt elk (Cervus canadensis roosevelti) and mule deer (Odocoileus hemionus hemionus) in Oregon. Collar flaps made of 18-oz "Herculite 80" were the most satisfactory for both elk and deer. Eighty-nine percent of the elk collar flaps were intact after 6 months and 82 percent of the deer collar flaps after 8 to 9 months. Reinforced Herculite 80 earmarkers resisted folding but showed a fairly low rate of retention in elk; only 46 percent remained after 6 months. "Dayglo Saflag" earmarkers were retained best on both elk (79 percent) and deer (87 percent). Ear tags with round post attachments were most suitable for securing fabric earmarkers because they were less apt to be torn through the ear cartilage. The aluminum "Perfect" ear tags were the most satisfactory for use without fabric earmarkers.

Hitchins, P. M. BODY WEIGHTS AND DRESSED CARCASS YIELDS OF IMPALA AND WILDEBEEST IN HLUHLUWE GAME RESERVE. Lammergeyer no. 6. p. 20-23. June 1966. WR 123: 22

[23 Moreland Rd., Pietermaritzburg, Natal, South Africa.]

Jones, Robert D., Jr. RAISING CARIBOU FOR AN ALEUTIAN INTRODUCTION. J. Wildl. Mgmt. 30(3): 453-460, 3 figs. July 1966. WR 123: 22

[Aleutian Islands Natl. Wildl. Refuge, Cold Bay, Alaska.] Abstract: Caribou calves captured in 1958 and 1959 in interior Alaska were moved to Adak Island in the central Aleutians, where they were held about 2 months in semi-domesticity and then released. Bottle-feeding and methods of care are described. Since their release the original 23 have expanded to 83 animals in five reproductive seasons. The herd is now wild in disposition, produces unusually large animals with commensurate antler growth, and is free of the parasites associated with native herds.

Kazlo, P. H. [DATA ON FEEDING OF SUS SCROFA L. IN THE BELOVEZHSKAYA VIRGIN FOREST.] Vyestsi Akad. Navuk BSSR Syeryya Biyalahichnykh Navuk 2: 90-94. 1965. [From Biol. Abstr. 47(11), 1966. With Russian summ.] WR 123: 22

Knorre, E. P. [SEASONAL FEATURES OF ELK FOOD IN THE PECHORSKOI TAIGA.] Soobshch. Inst. Lesa Akad. Nauk SSR 13: 70-73. 1959. [From Biol. Abstr. 47 (13), 1966, from Referat. Zhur., Biol., 1960, no. 45454. Transl. of Russian abstr.] WR 123: 23

Laptev, I. [RESULTS OF AN ESTIMATION OF MOOSE NUMBERS.] Okhota & Okhotnich'e Khoz. 5: 60. 1959. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1960, no. 25787. Transl. of Russian abstr.] WR 123: 23

Matschke, George H. TRAPPING AND HANDLING EUROPEAN WILD HOGS. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 21-24. 1962 [1965]. WR 123: 23
[Tenn. Game & Fish Comm., Nashville.] Summary: Two types of traps were used for trapping the European wild hog, a permanent pen and a portable chain-linked trap. Cap-Chur-Barb, a barbiturate type drug, used at the rate of 500 mg/15 pounds of body weight has immobilized 105 trapped European wild hogs without mortality.

Moran, Richard J., and Theodore Fairbanks. VESTIGIAL FIRST PREMOLAR IN MICHIGAN ELK. J. Mammal. 47(3): 514, 1 fig. Aug. 1966. WR 123: 23
[Houghton Lake Wildl. Res. Sta., Houghton Lake Heights, Mich.]

Rajakoski, Erkki, and Ilkka Koivisto. HIRVINAARAIDEN SUKUKYPSYYSIÄSTÄ SUOMESSA. [PUBERTY OF THE FEMALE MOOSE (ALCES ALCES) IN FINLAND.] Suomen Riista 18: 157-162, 2 figs. 1966. In Finnish with English summ. WR 123: 23

Sapetin, Ya. V., and S. G. Priklonskii. [A CONVERSION FACTOR OF THE ROUTE ESTIMATION OF THE EUROPEAN ELK (ALCES ALCES).] In: (Biology and hunting of European elk.) Rossel'khozizdat (Moscow). p. 122-126. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 10I212. Transl. of Russian abstr.] WR 123: 23

Simpson, C. David. TOOTH ERUPTION, GROWTH AND AGEING CRITERIA IN GREATER KUDU--TRAGELAPHUS STREPSICEROS PALLAS. Arnoldia 2(21): 1-12, 5 figs. 11 Mar. 1966. WR 123: 23
[Natl. Museums Rhodesia, Bulawayo, Rhodesia.]

Stewart, P. Greig, and Iona B. Stewart. THE USE OF SEX AND AGE RATIOS IN ESTIMATING ABUNDANCE AND PRODUCTIVITY OF IMPALA. Lammergeyer no. 6. p. 9-19, 1 fig. June 1966. WR 123: 23
[Natal Parks, Game & Fish Preservation Board, Pietermaritzburg, South Africa.] In Nov. 1963 in the 97 square-mile Mkuzi Game Reserve there was an estimated 20,000 impala increasing at the rate of 30% per annum.

Zaripov, R. Z. [METHODS OF DETERMINING THE AGE OF EUROPEAN ELK.] In: (Natural resources of Volga-Kama region. Animal world.) Nauka (Moscow). p. 30-45, illus. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 10I233. Transl. of Russian abstr.] WR 123: 23
"Based on wear of teeth."

Zaripov, R. Z., and V. A. Znamenskii. [METHODS OF ESTIMATING AND MAPPING THE POPULATION SIZE OF THE EUROPEAN ELK (ALCES ALCES).] In: (Biology and hunting of the European elk.) Rossel'khozizdat (Moscow). p. 114-121. 1964. [From Biol. Abstr. 47(13), 1966, from Referat. Zhur., Biol., 1965, no. 10I211. Transl. of Russian abstr.] WR 123: 23

DEER (Odocoileus)

Crouch, Glenn L. PREFERENCES OF BLACK-TAILED DEER FOR NATIVE FORAGE AND DOUGLAS-FIR SEEDLINGS. J. Wildl. Mgmt. 30(3): 471-475, 2 figs. July 1966. WR 123: 24

[US Forest Serv., Animal Problems Lab., Olympia, Wash.] Abstract: Studies of forage preferences of black-tailed deer (Odocoileus hemionus columbianus) were conducted during the winters of 1962 and 1963 in a 3-acre enclosure in the Tillamook Burn of northwest Oregon. Two deer were allowed to forage on native vegetation and planted Douglas-fir (Pseudotsuga menziesii) seedlings while periodic inspections were made of availability and use of trailing blackberry (Rubus ursinus) leaves, twigs of woody species, and the conifer seedlings. Blackberry leaves were the most highly preferred forage during the trial periods. Leaves of salal (Gaultheria shallon) ranked high but plants were relatively scarce in the enclosure. Red huckleberry (Vaccinium parvifolium) and cascara (Rhamnus purshiana) were preferred woody plants but other common species including red alder (Alnus rubra), hazel (Corylus californica), and vine maple (Acer circinatum) were utilized only when leafy forage was unavailable. Douglas fir ranked higher in preference than most common woody plants. Winter-active herbaceous forage was qualitatively determined to be highly preferred winter and early spring food. Douglas-fir and woody plant browsing appeared to be closely related to weather during the winter.

Dennett, Dan, and John Haygood. MANAGEMENT AREAS HUNTS SUCCESSFUL. La. Conservationist 18(3&4): 8-11, illus. Mar.-Apr. 1966. WR 123: 24

Analysis of managed deer hunt records in Louisiana for period 1955-1965, with emphasis on the 1964 and 1965 hunts.

Krefting, L. W., M. H. Stenlund, and R. K. Seemel. EFFECT OF SIMULATED AND NATURAL DEER BROWSING ON MOUNTAIN MAPLE. J. Wildl. Mgmt. 30(3): 481-488, 2 figs. July 1966. WR 123: 24

[Univ. Minn., St. Paul.] Abstract: This long-term study (1952-62) was made to measure the growth response of mountain maple (Acer spicatum) in Minnesota to different intensities of simulated and natural browsing by white-tailed deer (Odocoileus virginianus). For the test clumps browsed by deer, the annual growth of twigs within reach of deer (ground level to 7 feet) was measured in late October and remeasured in late April to determine the amount removed. Similar information was obtained on test clumps within two exclosures. To simulate various intensities of browsing, the annual growth was clipped 20, 40, 60, 80, and 100 percent. The degree of browsing had no apparent direct effect on the amount of growth the following season; other environmental factors were more important. Tolerance of mountain maple to browsing was high, however, since only 1 of 6 clumps had died after 100 percent of the annual growth had been clipped for 9 years. Sustained production of food within reach of deer was maintained at a level of use of about 80 percent. Since clumps are established primarily by the growth of underground stems, opportunities for management by cutting or by the application of common weed killers are excellent.

Lyon, L. Jack. HOW MANY SERVICEBERRY = ONE DEER? Mont. Wildl. 1966: 15-18, illus. July 1966. WR 123: 24

[Intermountain Forest & Range Expt. Sta., Missoula, Mont.] "Eating the annual growth of 67 mature serviceberry shrubs [Amelanchier alnifolia] a day, a deer requires nearly 25,000 plants each year."

Marburger, Rodney, and Jack Ward Thomas. ANATOMY OF A DEER HUNT. Texas Game & Fish 22(9): 10-12, 6 figs. Sept. 1964. WR 123: 24

Analysis of deer kill statistics for 1959 and 1960. Breakdowns: Buck kill vs. antlerless deer kill for the entire season and by quarters.

McDowell, Robert D. THE FAWN DROP IN CONNECTICUT. Conn. Wildl. Conserv. Bull. 12(3): 6, 1 fig. May-June 1966. WR 123: 25
[Univ. Conn., Storrs.] The peak of fawn drop occurred in the last week in May and the first two weeks in June. There is some indication that 6-7 month old fawns bred later than older deer, and that yearlings mated during a much shorter period than adults.

Rees, J. W., R. A. Kainer, and R. W. Davis. CHRONOLOGY OF MINERALIZATION AND ERUPTION OF MANDIBULAR TEETH IN MULE DEER. J. Wildl. Mgmt. 30(3): 629-631. July 1966. WR 123: 25
[Univ. Chicago, Chicago, Ill.] Abstract: The chronology of mineralization and eruption of the mandibular teeth of 128 mule deer (Odocoileus hemionus) from 99 days gestation to 33 months of age was studied radiographically. The following stages of development were recorded: beginning of cusp or incisal edge mineralization, beginning of root mineralization, beginning of eruption, time at which mineralization reached the apex of the root, and time of complete eruption. Mineralization began prior to 99 days gestation. Eruption and formation of the teeth were complete at 29 months of age.

Short, Henry L., Dean E. Medin, and Allen E. Anderson. SEASONAL VARIATIONS IN VOLATILE FATTY ACIDS IN THE RUMEN OF MULE DEER. J. Wildl. Mgmt. 30(3): 466-470, 1 fig. July 1966. WR 123: 25
[Southern Forest Expt. Sta., Nacogdoches, Texas.] Abstract: Thirty mule deer (Odocoileus hemionus) were collected throughout 1962. The rumino-reticular contents of each deer were sampled for (1) pH, (2) percent dry matter, and (3) the molar proportions of the individual volatile fatty acids (VFA) present. These data were compared to the seasonal dry matter level of several important deer browse species occurring on the same range. The pH, rumino-reticular dry matter, and acetic acid levels measured during the winter-early spring period were significantly greater than those obtained during the summer. The butyric and higher (valeric + isovaleric) acid proportions were significantly increased in the summer samples. During the autumn, pH, rumino-reticular dry matter, and acetic acid values increased and butyric and higher acid proportions decreased. Propionic acid proportions remained similar throughout the year. These relationships are interpreted as indicating an increased rumen fermentation rate during the summer season when range forage is succulent.

Siglin, Roger J. MARKING MULE DEER WITH AN AUTOMATIC TAGGING DEVICE. J. Wildl. Mgmt. 30(3): 631-633, 1 fig. July 1966. WR 123: 25
[Ill. Nat. Hist. Surv., Urbana.] Abstract: Automatic tagging devices were used to mark mule deer (Odocoileus hemionus) in Colorado. Deer entered 16.9 percent of 749 devices set on the winter range and 32.5 percent of 83 devices set on the summer range. Reliability of the devices was increased from 43.3 percent (winter range) to 70.4 percent (summer range) by modifying the snap mechanism.

Thomas, Jack Ward, and R. G. Marburger. QUANTITY VS. QUALITY. PART I. -- SYMPTOMS OF DEER HERD OVERPOPULATION. Texas Parks & Wildl. (formerly Texas Game & Fish) 23(10): 14-17, 33, illus. Oct. 1965. WR 123: 25
Browse lines; reproductive rate reduction; decline in size, weight and antler development in deer; and the ultimate deer die-off on the Edwards Plateau are discussed. In 1962 the predicted die-off almost equalled the legal kill for the three previous hunting seasons.

Thomas, Jack Ward, and R. G. Marburger. QUANTITY VS. QUALITY. PART II -- THE LLANO COUNTY STORY. Texas Parks & Wildl. (formerly Texas Game & Fish) 23 (11): 3-6, illus. Nov. 1965. WR 123: 25
Highlights of eleven years of deer management in the hill country of Texas. "Reducing the deer population as an effort to improve range conditions is a futile measure without proper adjustments in livestock grazing pressures. The harvest should be a maximum to remove the seasonal surplus without seriously affecting the brood stock."

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DEER (Odocoileus)--Continued

Thomas, Jack Ward, and R. G. Marburger. QUANTITY VS. QUALITY. PART III -- A DEER MANAGEMENT DECISION. Texas Parks & Wildl. (formerly Texas Game & Fish) [23](12): 12-15, illus. Dec. 1965. WR 123: 26

Last of a 3-part series. [See WR 123: 25.] "We have made much progress in our deer management program. The deer herd has been brought back from near oblivion to the present overabundance. We have learned basic truths about how deer herds should be managed. Giant steps have been taken down the road toward liberalized, both sex, harvests. We will have succeeded when we ultimately face up to a decision on the question, 'Quality or Quantity?' We can't have it both ways."

van Tets, Patricia, and Ian McT. Cowan. SOME SOURCES OF VARIATION IN THE BLOOD SERA OF DEER (ODOCOILEUS) AS REVEALED BY STARCH GEL ELECTROPHORESIS. Canadian J. Zool. 44(4): 631-647. July 1966. WR 123: 26

[CSIRO, Canberra, Australia.] Three sspp. of Odocoileus hemionus and 2 sspp. of Odocoileus virginianus.

Wendt, R. F., and Don Bragg. DEER TRAILS. Wis. Conserv. Bull. 31(1): 17-20, illus. Jan.-Feb. 1966. WR 123: 26

Historical digest of deer seasons in Wis. for the period 1851-1965. Data updated from Bersing [WR 88: 53]. During the past 60 years there has been a total legal harvest of 2 million deer. Wisconsin can expect a minimum yield of 75,000 to 100,000 deer every season.

Whicker, F. W., G. C. Farris, E. E. Remmenga, and A. H. Dahl. FACTORS INFLUENCING THE ACCUMULATION OF FALLOUT Cs137 IN COLORADO MULE DEER. Health Phys. 11(12): 1407-1414, illus. 1965. [From Biol. Abstr. 47(13), 1966.] WR 123: 26

[Colo. State Univ., Fort Collins.]

MAMMALS--MARINE

Andersen, Soren, and Albin Dziedzic. BEHAVIOUR PATTERNS OF CAPTIVE HARBOUR PORPOISE PHOCAENA PHOCAENA (L.). Bull. Inst. Oceanogr. Monaco 63(1316): 2-20, illus. 1964. [From Biol. Abstr. 47(9), 1966. In English with French and Russian summ.] WR 123: 26

[Lab. Acoust. Anim., École Pratique Hautes-Études, Jouy-en-Josas, France.]

Bow, Jeanne M., and C. Purday. A METHOD OF PREPARING SPERM WHALE TEETH FOR AGE DETERMINATION. Nature 210(5034): 437-438, 1 fig. 23 Apr. 1966. WR 123: 26

[CSIRO, Cronulla, New South Wales.]

Butler, G. D., Jr., and M. D. F. Udvardy. BASKING BEHAVIOR OF THE HAWAIIAN MONK SEAL ON LAYSAN ISLAND. J. Wildl. Mgmt. 30(3): 627-628. July 1966. WR 123: 26

[Univ. Ariz., Tucson.] Abstract: Hawaiian monk seals, Monachus schauinslandi, were observed on a 1,000-m section of beach on the west coast of Laysan Island during an 8-day period. At daylight, clouds of flies, mainly Musca domestica, disturbed the seals sleeping in the vegetation, and from 6:00 to 8:00 a.m. they retreated to the water's edge instead of remaining in the vegetation to bask. The number of seals at the water line remained almost constant from 10:00 a.m. to 2:00 p.m. From 5:00 to 7:00 p.m. the seals went out to sea or came up the beach and into the vegetation for the night.

Delyamure, S. L., and A. S. Skryabin. [A METHOD FOR CONDUCTING HELMINTHOLOGICAL EXAMINATIONS OF MARINE MAMMALS (SPECIFIC FEATURES OF THE COLLECTION OF HELMINTHOLOGICAL MATERIAL FROM PINNIPEDIA AND CETACEA).] In: (Marine mammals.) Nauka (Moscow). p. 302-310. 1965. [From Biol. Abstr. 47(9), 1966, from Referat. Zhur., Biol., 1965, no. 16K11. Transl. of Russian abstr.] WR 123: 26

Eiseman, B., R. Dilbone, and J. Slater. DEVOCALIZING SEA LIONS (PINNIPEDIA OTARIA JUBATA, ZALOPHUA CALIFORNIANUS). J. Am. Vet. Med. Assoc. 147(10): 1086-1089. 1965. [From Biol. Abstr. 47(10), 1966.] WR 123: 27
[Univ. Ky., Lexington.]

Fedoseev, G. A., and A. V. Yablokov. [MORPHOLOGICAL DESCRIPTION OF THE RINGED SEAL (PUSA HISPIDA; PINNIPEDIA, MAMMALIA) IN THE SEA OF OKHOTSK.] Zool. Zhur. 44(5): 759-765, illus., map. 1965. [From Biol. Abstr. 47(9), 1966. In Russian with English summ.] WR 123: 27
[Acad. Sci. USSR, Moscow, USSR.]

Fiscus, Clifford H., Gary A. Baines, and Hiroshi Kajimura. PELAGIC FUR SEAL INVESTIGATIONS, ALASKA, 1963. US F&WS, Spec. Sci. Rept.--Fisheries no. 489. iv + 33 p. 1965. WR 123: 27
[Marine Mammal Biol. Lab., Seattle, Wash.] Courtesy/ Victor B. Scheffer.

Fiscus, Clifford H., and Hiroshi Kajimura. PELAGIC FUR SEAL INVESTIGATIONS, 1964. US F&WS, Spec. Sci. Rept.--Fisheries no. 522. v + 47 p., 16 figs. Nov. 1965. WR 123: 27
[Marine Mammal Biol. Lab., Seattle, Wash.] Fewer seals were seen off Calif. in Apr. and May 1964 than during similar research in Jan. to Mar. in 1958, 1959, and 1961; young females formed a larger proportion of the collections in 1964 (21-30 percent) than in previous years (10, 9, and 15 percent); 76 percent of the total males taken in all 4 years off Calif. were collected in 1964. Summer distribution of seals in the Bering Sea was similar to that in 1962 and 1963. Females, predominantly mature, made up 91 percent of the Bering Sea collections. The percentage of tagged seals in pelagic samples increased progressively from 0.9 in 1958 to 4.9 in 1964.--From abstr.

Fujino, Kazuo. FIN WHALE SUBPOPULATIONS IN THE ANTARCTIC WHALING AREAS II, III, AND IV. Sci. Rept. Whales Res. Inst. (18): 1-27. 1964. [From Biol. Abstr. 47(12), 1966.] WR 123: 27

Harington, C. R. EXTRALIMITAL OCCURRENCES OF WALRUSES IN THE CANADIAN ARCTIC. J. Mammal. 47(3): 506-513, 1 fig. Aug. 1966. WR 123: 27
[Natl. Museum Canada, Ottawa.] Abstract: Thirty-three occurrences of walruses beyond their normal range in the Canadian Arctic are recorded. The southwestern group of walrus records is tentatively referred to the Pacific walrus (Odobenus rosmarus divergens), and the northeastern group to the Atlantic walrus (Odobenus rosmarus rosmarus) on the basis of geographic evidence and limited taxonomic information.

MacAskie, I. B. UNUSUAL EXAMPLE OF GROUP BEHAVIOUR BY KILLER WHALES (ORCINUS RECTIPINNA). Murrelet 47(2): 38, [1 fig.]. May-Aug. 1966. WR 123: 27
[Fisheries Res. Board Canada Biol. Sta., Nanaimo, British Columbia.]

McLaren, Ian A. TAXONOMY OF HARBOR SEALS OF THE WESTERN NORTH PACIFIC AND EVOLUTION OF CERTAIN OTHER HAIR SEALS. J. Mammal. 47(3): 466-473. Aug. 1966. WR 123: 27
[McGill Univ., Montreal, Quebec.]

Mejia, Jorge. MARACIÓN DE CACHALOTES FRENTE A PERÚ. [THE MARKING OF SPERM WHALES OFF THE COAST OF PERÚ.] Inform. Inst. Invest. Recur. Soc. Mar. 26: 1-12, illus., map. 1964. [From Biol. Abstr. 47(9), 1966. In Spanish.] WR 123: 27

Newby, Terrell C. VIABILITY OF PREMATURE FETAL HARBOR SEAL. Murrelet 47 (2): 46, 1 fig. May-Aug. 1966. WR 123: 27
[Seattle, Wash.]

Ohsumi, Seiji. COMPARISON OF MATURITY AND ACCUMULATION RATE OF CORPORA ALBICANTIA BETWEEN THE LEFT AND RIGHT OVARIES IN CETACEA. Sci. Rept. Whales Res. Inst. (18): 123-148, illus. 1964. [From Biol. Abstr. 47(11), 1966.] WR 123: 28

Corpora lutea and albicantia were counted in the right and left ovaries of 23 spp. of Cetacea and grouped into 3 categories.

Ohsumi, Seiji. EXAMINATION ON AGE DETERMINATION OF THE FIN WHALE. Sci. Rept. Whales Res. Inst. (18): 49-88. 1964. [From Biol. Abstr. 47(11), 1966.] WR 123: 28

The average animal mortality rate of fin whales (Balaenoptera physalis) caused by hunting is 10-12%. Sexual maturity is reached in 9 to 11 years. The annual rate of formation of ear plug laminations is about one a year and the annual ovulation rate is about 0.5.

Rasmussen, R. A., and N. E. Head. THE QUIET GRAY WHALE (ESCHRICHTIUS GLAUCUS). Deep Sea Res. 12(6): 869-877, illus. 1965. [From Biol. Abstr. 47 (13), 1966.] WR 123: 28

[Scripps Inst. Oceanogr., Univ. Calif., San Diego.] Studies conducted during the period December 22, 1964 - March 7, 1965 near San Diego, California and at several locations in Baja California failed to confirm the use of acoustic signals by the gray whale. It is concluded that this cetacean rarely transmits subsurface sounds, and that it utilizes methods other than echo-location for navigation in shallower areas during the day.

Roppel, Alton Y., Ancel M. Johnson, Richard D. Bauer, Douglas G. Chapman, and Ford Wilke. FUR SEAL INVESTIGATIONS, PRIBILOF ISLANDS, ALASKA, 1962. US F&WS, Spec. Sci. Rept.--Fisheries no. 454. vi + 101 p. 1963. WR 123: 28

Courtesy/ Victor B. Scheffer.

Roppel, Alton Y., Ancel M. Johnson, Raymond E. Anas, and Douglas G. Chapman. FUR SEAL INVESTIGATIONS, PRIBILOF ISLANDS, ALASKA, 1965. US F&WS, Spec. Sci. Rept.--Fisheries no. 536. v + 45 p. 1966. WR 123: 28

Courtesy/ Victor B. Scheffer.

Saunders, A. M., and R. C. Hubbard. STUDIES ON PINNIPEDS # 1: OBSTRUCTIVE EMPHYSEMA IN AN ELEPHANT SEAL (MIROUNGA ANGUSTIROSTRIS). Lab. Animal Care 16 (3): 217-223, 5 figs. June 1966. WR 123: 28

[c/o Bio-Sonar Labs., Stanford Res. Inst., Menlo Park, Calif.]

Skryabin, A. S. [LARVAL FORMS OF HELMINTHS FOUND ON MARINE MAMMALS IN THE SEAS OF THE FAR EAST.] In: (Marine Mammals.) Nauka (Moscow). p. 311-316, illus. 1965. [From Biol. Abstr. 47(9), 1966, from Referat. Zhur., Biol., 1965, no. 16K12. Transl. of Russian abstr.] WR 123: 28

Solyanik, G. A. [SOME INFORMATION ABOUT THE SEALS OF THE ANTARCTIC.] Inform. Byul. Sovet Antarkt. Ekspeditsii 47: 54-59, maps. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 5I233. Transl. of Russian abstr.] WR 123: 28

"Lobodon carcinophagus and Ommatophoca rossi."

Stirling, Ian. A TECHNIQUE FOR HANDLING LIVE SEALS. J. Mammal. 47(3): 543-544, 1 fig. Aug. 1966. WR 123: 28

[Univ. Canterbury, Christchurch, New Zealand.]

Yablokov, A. V., and V. Ya. Etin. [ANALYSIS OF POPULATION DIFFERENCES IN THE BODY COLORING OF MAMMALS (AS EXEMPLIFIED BY THE HARP SEAL: PHOCA GROENLANDICA).] Zool. Zhur. 44(7): 1103-1106, illus. 1965. [From Biol. Abstr. 47(12), 1966. In Russian with English summ.] WR 123: 28

[Inst. Anim. Morphol., Acad. Sci. USSR, Moscow, USSR.]

MAMMALS--OTHER GROUPS

Anderson, J. M., and K. Benirschke. THE ARMADILLO, DASYPUS NOVEMCINCTUS, IN EXPERIMENTAL BIOLOGY. Lab. Animal Care 16(3): 202-216, 9 figs. June 1966. WR 123: 29
[Royal Infirmary, Glasgow, Scotland.]

Bothma, J. du P. BEHAVIOR OF A YOUNG PROCAVIA CAPENSIS. J. Mammal. 47(3): 545-546. Aug. 1966. WR 123: 29
[Texas A & M Univ., College Station.]

Winter, J. W. BIRD PREDATION BY THE AUSTRALIAN MARSUPIAL SQUIRREL GLIDER. J. Mammal. 47(3): 530. Aug. 1966. WR 123: 29
[Univ. Queensland, Brisbane, Australia.] "Petaurus norfolcensis."

BIRDS--GENERAL

Bassini, Ettore. RISULTATI STATISTICI SUI DATI DI CATTURA DELLA PEPPOLA (FRINGILLA MONTIFRINGILLA L.) IN IMPIANTI DI UCCELLAGIONE ITALIANI. [STATISTICAL DATA RELATIVE TO THE CAPTURE OF FRINGILLA MONTIFRINGILLA IN ITALIAN BIRD TRAPPING STATIONS.] Ric. Zool. Appl. Caccia 42: 1-42, 7 figs. 1966. In Italian with summaries in English, French and German. WR 123: 29

Berger, Andrew J. SURVIVAL IN THE WILD OF HAND-REARED PASSERINE BIRDS. Condor 68(3): 304-305. May-June 1966. WR 123: 29
[Univ. Hawaii, Honolulu.] A hand-reared cardinal (Richmondena cardinalis) lived in the wild about two years after release, and a rose-breasted grosbeak (Pheucticus ludovicianus) lived about one year.--Courtesy/ Paul A. Stewart.

Gannon, G. R. THE INFLUENCE OF HABITAT ON THE DISTRIBUTION OF AUSTRALIAN BIRDS. Emu 65(4): 241-253, [3 figs.], 1 pl. Mar. 1966. WR 123: 29
[38 Livingstone Ave., Pymble, New South Wales, Australia.]

Kenaga, Eugene E. ARE BIRDS INCREASING IN NUMBERS? Bull. Entomol. Soc. Am. 11(2): 81-83. June 1965. WR 123: 29
[Dow Chem. Co., Midland, Mich.] "My purpose in writing this article is not to refute or affirm Marvin's premise [WR 123: 29] that bird populations are increasing, but to suggest that the Christmas Bird Census may not be statistically reliable as an indicator of trends in the total bird population in the United States between 1949 and 1962." [This article was reprinted Audubon Field Notes 20(1): 47-49. Feb. 1966.]

Marvin, Philip H. BIRDS ON THE RISE. Bull. Entomol. Soc. Am. 10(3): 194-196. Sept. 1964. WR 123: 29
[Manhattan, Kans.] A 3-fold increase in total bird numbers observed during the past decade is indicated from an analysis of the Christmas Bird Counts. Five tables are presented summarizing counts of robins, mourning doves, flickers, starlings, cardinals, mockingbirds, house sparrows, crows, eastern meadowlarks and red-wing blackbirds. "Far from declining during the past 15 years of expanded insecticide use, bird numbers have multiplied several fold." [See Kenaga, WR 123: 29, for an analysis of the Christmas Bird Counts technique.]

Southern, William E. UTILIZATION OF SHAD AS WINTER FOOD BY BIRDS. Auk 83 (2): 309-311. Apr. 1966. WR 123: 29
[Northern Ill. Univ., DeKalb.] Eighteen species are listed as having fed on gizzard shad (Dorosoma cepedianum).--Courtesy/ Paul A. Stewart.

Yanushevich, A. I. [FRIENDS WITH WINGS.] In: (Love and conserve nature in Kirghizia.) (Frunze). p. 42-49. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 4I323. Transl. of Russian abstr.] WR 123: 29
At the present time there has been a catastrophic decrease in the number of pheasants (Phasianus colchicus) in Kirghizia so that most of them are found only in game preserves. The number of rock partridges (Alectoris graeca) has

decreased. On Lakes Son-Kul' and Chatyr-Kul', where there used to be thousands of bar-headed geese (Eulabeia indica) only 300-400 remain now. The number of game birds increases every year in game preserves and off-limit forests. On Lake Issyk-Kul' 100,000 ducks, geese, swans, and coots spend the winter. The most important measure for re-establishing the former number of game birds is the organization of game farms, of which there are only a few. Attention should be devoted to preserving the useful predators; to put a complete ban on the hunting of the swan, crane, Houbara bustard (Chlamydotis undulata macqueeni), bar-headed goose, and some other rare and valuable birds; and to bring culprits who destroy nests and kill songbirds to justice.

BIRDS--TECHNIQUES

Danilov, N. N. [USE OF THE PNEUMATIZATION OF THE FRONTAL BONE TO DETERMINE THE AGE OF SOME PERCHING BIRDS.] In: (Natural resources of the Volga-Kama area. Animal world.) Nauka (Moscow). p. 175-181. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 5I124. Transl. of Russian abstr.] WR 123: 30

Hewitt, Oliver H., and Peter J. Austin-Smith. A SIMPLE WING TAG FOR FIELD-MARKING BIRDS. J. Wildl. Mgmt. 30(3): 625-627, 2 figs. July 1966. WR 123: 30
[Cornell Univ., Ithaca, N.Y.] Abstract: Five species of small birds (1,365) were easily field marked with a conspicuous nylon wing tag fastened with a strap around the humerus. Marked birds recaptured after 10 months showed no injury or feather wear, nor were obvious changes noted in behavior of the marked birds.

Luckwill, L. C., and P. S. Weaver. TECHNIQUES FOR THE STUDY OF BIRD REPELLENTS. Long Ashton Agr. Hort. Res. Sta. Univ. Bristol Ann. Rept. 1964: 64-72, illus. 1964. [From Biol. Abstr. 47(11), 1966.] WR 123: 30

Malone, Charles R., and Vernon W. Proctor. REARING KILLDEERS FOR EXPERIMENTAL PURPOSES. J. Wildl. Mgmt. 30(3): 589-594, 1 fig. July 1966. WR 123: 30
[Rutgers Univ., New Brunswick, N.J.] Abstract: Sixty-two killdeers (Charadrius vociferus) were reared in captivity and a flock easily maintained for 2 years. Most of the birds were hatched by artificial incubation from eggs taken in the field. Cardboard boxes 2 x 2 x 1 ft, warmed by a 60-watt lamp, housed four birds each for the first 2 weeks. For another week they were put outside during the day, and from 3 weeks they remained outside all year. Poultry wire enclosures for 10-20 birds, covering 8 x 10 ft of ground, were warmed by suspended 150-watt lamps. The ground was occasionally raked and spaded and given a thin mat of straw. Hatchlings the first week were fed only pieces of living earthworms, then large mealworms plus a mixture of boiled eggs and commercial cat food, and a commercial game bird feed. From 3 weeks on, the birds were maintained in a healthy condition on a diet of only cat food and game bird feed. Captive killdeers are very well suited for research on the biology of Charadriidae and should be useful in investigating the effects of pesticides and radioactive wastes on shorebirds.

Mitterling, Lloyd A. CONSTRUCTION OF A "BETA-CONFINEMENT" BIRD ENCLOSURE. Bird-Banding 37(2): 123-125, 2 figs. Apr. 1966. WR 123: 30
[Univ. Conn., Storrs.] An enclosure 80' x 60' x 20' high was constructed around 12 apple trees at a cost of $1000 for materials, equipment and labor.--Courtesy/ Paul A. Stewart.

Noskov, G. A. [EXPERIENCE IN USING DECOY BIRDS IN FIELD ORNITHOLOGICAL INVESTIGATIONS.] Vestnik Leningr. Univ. Ser. Biol. 20(1): 147-150, illus. 1965. [From Biol. Abstr. 47(9), 1966. In Russian with English summ.] WR 123: 30

Short, Lester L., Jr., and Allan R. Phillips. MORE HYBRID HUMMINGBIRDS FROM THE UNITED STATES. Auk 83(2): 253-265. Apr. 1966. WR 123: 31
[U.S. Natl. Museum, Washington, D.C.] Reports hybrids between Eugenes fulgens X Cynanthus latirostris and Archilochus alexandri X Calypte costae.--Courtesy/ Paul A. Stewart.

BIRDS--MORPHOLOGY & PHYSIOLOGY

Amadon, Dean. AVIAN PLUMAGES AND MOLTS. Condor 68(3): 263-278. May-June 1966. WR 123: 31
[Am. Museum Nat. Hist., New York, N.Y.] Expresses dissatisfaction with classification of plumages and molts proposed by P. S. Humphrey and K. C. Parkes [WR 95: 71 and WR 112: 37] and proposes new classification, more similar to the system proposed by J. Dwight, Jr., in 1900 and generally used since.--Courtesy/ Paul A. Stewart.

Brush, Alan H. AVIAN HEART SIZE AND CARDIOVASCULAR PERFORMANCE. Auk 83(2): 266-273, 2 figs. Apr. 1966. WR 123: 31
[Univ. Conn., Storrs.] The log of heart weight is a linear function of the log body weight in birds of body weight greater than 100 g. In birds of body weight less than 100 g the slope of the regression curve is significantly less steep. There is no correlation between heart ratio and body weight for a wide array of birds of different ecological and taxonomic relationships.--From summ. Courtesy/ Paul A. Stewart.

Hsia, Wu-Ping, and Hsiang-Kan Chia. [ON THE GROWTH OF THE NESTLINGS OF THE TREE SPARROW.] Acta Zool. Sinica 17: 121-136. 1965. [From Auk 83(2), 1966. In Chinese with English summ.] WR 123: 31

Johnson, Ned K. MORPHOLOGIC STABILITY VERSUS ADAPTIVE VARIATION IN THE HAMMOND'S FLYCATCHER. Auk 83(2): 179-200, 5 figs. Apr. 1966. WR 123: 31
[Univ. Calif., Berkeley.] Courtesy/ Paul A. Stewart.

Johnston, Richard F. THE ADAPTIVE BASIS OF GEOGRAPHIC VARIATION IN COLOR OF THE PURPLE MARTIN. Condor 68(3): 219-228, 4 figs. May-June 1966. WR 123: 31
[Univ. Kans., Lawrence.] Purple martins (Progne subis) from the southwestern North American deserts are pale and small; martins from the mountains and the north and east are darker and larger. Color of the plumage of females and first-year males is thought to be both cryptic and of value in regulating heat flow between the bird and its environment.--From summ. Courtesy/ Paul A. Stewart.

Lasiewski, Robert C., and George A. Bartholomew. EVAPORATIVE COOLING IN THE POOR-WILL AND THE TAWNY FROGMOUTH. Condor 68(3): 253-262, 7 figs. May-June 1966. WR 123: 31
[Univ. Calif., Los Angeles.] "The present study undertakes to elucidate some aspects of the mechanism of evaporative cooling in members of two families of the order Caprimulgiformes, the poor-will, Phalaenoptilus nuttallii (Family Caprimulgidae), which flutters the gular area at high ambient temperatures, and the tawny frogmouth, Podargus strigoides (Family Podargidae), which pants when subjected to heat stress."--Courtesy/ Paul A. Stewart.

Mueller, Helmut C., and Daniel D. Berger. ANALYSES OF WEIGHT AND FAT VARIATIONS IN TRANSIENT SWAINSON'S THRUSHES. Bird-Banding 37(2): 83-112, 4 figs. Apr. 1966. WR 123: 31
[Univ. Wis., Madison.] Presumably as a result of handling, Swainson's thrushes (Hylocichla ustulata) showed decline in weight in recaptures on day after the first banding. In subsequent recaptures, weight gains indicated fat deposition of 0.34 g per day.--Courtesy/ Paul A. Stewart.

Rogers, David Thomas, Jr. A STUDY OF AUTUMNAL POSTMIGRANT WEIGHTS AND VERNAL FATTENING OF NORTH AMERICAN MIGRANTS IN THE TROPICS. Ph.D. thesis, Univ. Ga. 140 p. 1965. [From Dissertation Abstr. 26(11), 1966.] WR 123: 32

Tanner, J. A. EFFECT OF MICROWAVE RADIATION ON BIRDS. Nature 210(5036): 636. 7 May 1966. WR 123: 32
[Natl. Res. Council, Ottawa, Canada.] Experiments with chickens, pigeons and ringbill gulls.

BIRDS--BEHAVIOR & MIGRATION

Aschoff, Juergen, and Wever Ruetger. CIRCADIAN RHYTHMS OF FINCHES IN LIGHT-DARK CYCLES WITH INTERPOSED TWILIGHTS. Comp. Biochem. Physiol. 16(4): 507-514, illus. 1965. [From Biol. Abstr. 47(9), 1966.] WR 123: 32
[Max-Planck-Inst. Verhaltensphysiol., Starnberg, West Germany.]

Balcells, E. CRECIMIENTO NIDICOLA DEL MIRLO. [GROWTH OF THE BLACKBIRD IN THE NEST.] Misc. Zool. 2(1): 139-144, illus. 1965. [From Biol. Abstr. 47 (11), 1966. In Spanish with English summ.] WR 123: 32
[Cent. Pirenaico Biol. Exp., Barcelona, Spain.]

Belskaya, G. S. [THE ECOLOGY OF THE DANCING WHEATEAR IN TURKMENIYA.] Izvestiya Akad. Nauk Turkmenskoi SSR, Ser. Biol. no. 2. p. 64-73. 1965. [From Bird-Banding 37(2), 1966. In Russian.] WR 123: 32

Chunikhin, S. P. [PECULIARITIES OF NEST PARASITISM IN THE GLUKHA CUCKOO (CUCULUS SATURATUS).] Zool. Zhur. 43(8): 1249-1250. 1964. [From Bird-Banding 37(2), 1966. In Russian.] WR 123: 32

Davis, Peter. THE MOVEMENTS OF PIED WAGTAILS AS SHOWN BY RINGING. Bird Study 13(2): 147-162, 3 figs. June 1966. WR 123: 32
[British Trust for Ornithology, Tring, Hertfordshire, England.]

De Benedictis, Paul A. THE BILL-BRACE FEEDING BEHAVIOR OF THE GALÂPAGOS FINCH GEOSPIZA CONIROSTRIS. Condor 68(2): 206-208, 1 fig. Mar.-Apr. 1966. WR 123: 32
[Univ. Mich. Museum Zool., Ann Arbor.] The Galápagos finch is able to move relatively large stones by bracing its bill against a rock and kicking away the stones beneath it with its feet.--Courtesy/ Paul A. Stewart.

De Benedictis, Paul. THE FLIGHT SONG DISPLAY OF TWO TAXA OF VERMILION FLYCATCHER, GENUS PYROCEPHALUS. Condor 68(3): 306-307. May-June 1966. WR 123: 32
[Univ. Mich. Museum Zool., Ann Arbor.] Comparison of flight songs of Pyrocephalus rubinus and P. nanus.--Courtesy/ Paul A. Stewart.

Dunham, David W. MAINTENANCE ACTIVITIES OF THE ROSE-BREASTED GROSBEAK. Wilson Bull. 78(1): 68-78. Mar. 1966. WR 123: 32
[Zool. Lab. der Rijksuniversiteit, Leiden, Netherlands.] The following are discussed: feeding, drinking, defecation, bill-wiping, licking the tomium, head-shaking, scratching, rubbing the head, preening, cleaning the feet, yawning, stretching, fluffing the plumage, ruffling and shaking the plumage, bathing, after bathing, sunning, sleeping, and locomotion.--Courtesy/ Paul A. Stewart.

Friedmann, Herbert. THE HISTORY OF OUR KNOWLEDGE OF AVIAN BROOD PARASITISM. Centaurus 10: 282-304. 1964. [From Bird-Banding 37(2), 1966.] WR 123: 32

Grant, P. R. LATE BREEDING ON THE TRES MARÍAS ISLANDS. Condor 68(3): 249-252. May-June 1966. WR 123: 33
[McGill Univ., Montreal, Quebec, Canada.] Equivalent phases of the breeding seasons of eight species of birds are attained 3-8 weeks later on the Tres Marías Islands than on the nearby mainland at the same latitude. "Late breeding enables birds to feed their nestlings at a time when food is plentiful. But this late breeding necessitates starting at a time when it is metabolically disadvantageous to do so and is offset by the utilization of fat reserves."--Courtesy/ Paul A. Stewart.

Harrison, C. J. O. ALLOPREENING AS AGONISTIC BEHAVIOUR. Behaviour 24(3-4): 161-209, 12 figs. 1965. In English with German summ. WR 123: 33
[British Museum (Nat. Hist.), London, England.] Information on allopreening in 41 different avian families.

Holcomb, Larry C. THE DEVELOPMENT OF GRASPING AND BALANCING COORDINATION IN NESTLINGS OF SEVEN SPECIES OF ALTRICIAL BIRDS. Wilson Bull. 78(1): 57-63. Mar. 1966. WR 123: 33
[Midland Coll., Fremont, Nebr.] Most nestlings could balance upright at 10 days of age. Catbirds (Dumetella carolinensis) appeared slowest in developing this capability.--From summ. Courtesy/ Paul A. Stewart.

Johnston, R. F. NESTSITE SITTING BY BREEDING HOUSE SPARROWS. Kans. Ornithol. Soc. Bull. 16: 17-18. 1965. [From Auk 83(2), 1966.] WR 123: 33
When eggs are present, males increase the amount of time spent sitting near the nest entrance.

Kilham, Lawrence. NESTING ACTIVITIES OF BLACK-BACKED WOODPECKERS. Condor 68(3): 308-310. May-June 1966. WR 123: 33
[Dartmouth Medical School, Hanover, N.H.] Methods of communication, resting by the nest, conflicts and greetings, food hunting, vocalizations of young, and comparison of Picoides arcticus with other species are discussed.--Courtesy / Paul A. Stewart.

Klopfer, P. H., and J. P. Hailman. HABITAT SELECTION IN BIRDS. Advance Stud. Behav. 1: 279-303, illus. 1965. [From Biol. Abstr. 47(9), 1966.] WR 123: 33
[Duke Univ., Durham, N.C.]

Laskey, Amelia R. THE MANNER OF FEEDING FLEDGLING WOODPECKERS. Wilson Bull. 78(1): 64-67. Mar. 1966. WR 123: 33
[1521 Graybar Lane, Nashville, Tenn.] Downy woodpeckers (Dendrocopos pubescens) and a yellow-shafted flicker (Colaptes auratus) were reported pecking insects from the adults' bills rather than being fed by regurgitation.--Courtesy/ Paul A. Stewart.

Ricklefs, Robert E. BEHAVIOR OF YOUNG CACTUS WRENS AND CURVE-BILLED THRASHERS. Wilson Bull. 78(1): 47-56, 1 fig. Mar. 1966. WR 123: 33
[Univ. Pa., Philadelphia.] Courtesy/ Paul A. Stewart.

Royama, T. A RE-INTERPRETATION OF COURTSHIP FEEDING. Bird Study 13(2): 116-129, 1 fig. June 1966. WR 123: 33
[Univ. Tokyo, Tokyo, Japan.] "Parus major and P. caeruleus."

Selander, Robert K. SEXUAL DIMORPHISM AND DIFFERENTIAL NICHE UTILIZATION IN BIRDS. Condor 68(2): 113-151, 8 figs. Mar.-Apr. 1966. WR 123: 33
[Univ. Texas, Austin.] Courtesy/ Paul A. Stewart.

Snow, D. W. MOVEMENTS OF BRITISH ROBINS AS SHOWN BY RINGING. British Birds 59(2): 67-74, 2 figs. Feb. 1966. WR 123: 33

BIRDS--BEHAVIOR & MIGRATION--Continued

Taylor, Walter Kingsley. ADDITIONAL RECORDS OF BLACK-TAILED GNATCATCHERS PARASITIZED BY THE DWARF BROWN-HEADED COWBIRD. Am. Midland Nat. 76(1): 242-243. July 1966. WR 123: 34
[Ariz. State Univ., Tempe.]

Turner, Edward R. A. SOCIAL FEEDING IN BIRDS. Behaviour 24(1-2): 1-46, 16 figs. 1964. In English with German summ. WR 123: 34
[St. Luke's Coll., Exeter, England.] Results of seven experiments in social feeding with chaffinches and sparrows.

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Andrle, Robert F. NORTH AMERICAN MIGRANTS IN THE SIERRA DE TUXTLA OF SOUTHERN VERACRUZ, MEXICO. Condor 68(2): 177-184, 1 fig. Mar.-Apr. 1966. WR 123: 34
[Buffalo Museum Sci., Buffalo, N.Y.] An annotated list of 67 spp.--Courtesy/ Paul A. Stewart.

Felton, C. CHECK LIST OF BIRDS AND THEIR ECOLOGY ON THE S.W. LANCASHIRE DUNES AND SHORE. Merseyside Naturalists' Assoc., North-Western Bird Rept. 1963-66: 54-67, illus. 1966. WR 123: 34

ffrench, Richard P., and Margaret ffrench. RECENT RECORDS OF BIRDS IN TRINIDAD AND TOBAGO. Wilson Bull. 78(1): 5-11 + 1 pl. Mar. 1966. WR 123: 34
[Texaco Trinidad, Inc., Pointe-a-Pierre, Trinidad.] Observations are reported on 48 spp.--Courtesy/ Paul A. Stewart.

Haapanen, Antti. BIRD FAUNA OF THE FINNISH FORESTS IN RELATION TO FOREST SUCCESSION. I. Ann. Zool. Fennici 2(3): 153-196, illus. 1965. [From Biol. Abstr. 47(12), 1966.] WR 123: 34
[Univ. Helsinki, Helsinki, Finland.]

Hardy, Eric. THE ORNITHOLOGY OF THE LIVERPOOL AREA, THE NORTH-WEST ENGLAND AND NORTH WALES. Merseyside Naturalists' Assoc., North-Western Bird Rept. 1963-66: 1-53, illus. 1966. WR 123: 34

Hayward, C. Lynn. NEW AND UNUSUAL BIRD RECORDS FROM UTAH. Condor 68(3): 305-306. May-June 1966. WR 123: 34
[Brigham Young Univ., Provo, Utah.] "Pelecanus occidentalis, Pelecanus erythrorhynchos, Anser albifrons, Pluvialis dominica, Squatarola squatarola, and Numenius phaeopus."--Courtesy/ Paul A. Stewart.

Hemming, James E. NOTES ON THE STATUS OF SOME BIRDS IN SOUTH-CENTRAL ALASKA. Condor 68(2): 163-166, 1 fig. Mar.-Apr. 1966. WR 123: 34
[Univ. Mont., Missoula.] With notes on six species.--Courtesy/ Paul A. Stewart.

Kessel, Brina, and Heinrich K. Springer. RECENT DATA ON STATUS OF SOME INTERIOR ALASKA BIRDS. Condor 68(2): 185-195. Mar.-Apr. 1966. WR 123: 34
[Univ. Alaska, Box 375, College, Alaska.] Reports observations on about 35 spp.--Courtesy/ Paul A. Stewart.

Lee, Teh-How, Sen-Wu Cheng, and Tso-Hsin Cheng. [AVIFAUNAL STUDIES OF THE UH-SHUH AUTONOMOUS REGION, CHINGHAI PROVINCE.] Acta Zool. Sinica 17: 217-229. 1965. [From Auk 83(2), 1966. In Chinese with English summ.] WR 123: 34
Systematic and ecological notes on 110 spp. in five vegetation zones at elevations from 2,500-4,600 meters.

Niles, David M. ADDITIONAL DISTRIBUTIONAL RECORDS FROM NEW MEXICO. Condor 68(2): 213-215. Mar.-Apr. 1966. WR 123: 34
[Univ. Kans., Lawrence.] An annotated list of 18 spp.--Courtesy/ Paul A. Stewart.

Papadopol, Aurel. ÉTUDE SUR LES OISEAUX DE LA ZONE INONDABLE DU DANUBE SITUÉE ENTRE GIURGIU ET OLTENITA. [BIRDS OF THE DANUBE FLOOD ZONE BETWEEN GIURGIU AND OLTENITA.] Trav. Mus. Hist. Nat. "Grigore Antipa" 4: 431-471, illus., maps. 1963. [From Biol. Abstr. 47(10), 1966. In French with Russian and Romanian summ.] WR 123: 35

Pattie, Donald L., and Nicolaas A. M. Verbeek. ALPINE BIRDS OF THE BEARTOOTH MOUNTAINS. Condor 68(2): 167-176, 1 fig. Mar.-Apr. 1966. WR 123: 35
[Museum Vertebrate Zool., Berkeley, Calif.] Observations are reported on 61 spp.--Courtesy/ Paul A. Stewart.

Rappe, A. CONTRIBUTION A L'ETUDE ECOLOGIQUE DES MILIEUX ORNITHOLOGIQUES DU LIMBOURG. [CONTRIBUTION TO THE ECOLOGIC STUDY OF THE ORNITHOLOGIC ENVIRONMENT OF LIMBOURG.] Gerfaut Rev. Belg. Ornithol. 52(2): 416-447, illus., maps. 1962. [From Biol. Abstr. 47(12), 1966. In French.] WR 123: 35

West, George C., and Clayton M. White. RANGE EXTENSIONS AND ADDITIONAL NOTES ON THE BIRDS OF ALASKA'S ARCTIC SLOPE. Condor 68(3): 302-304. May-June 1966. WR 123: 35
[Univ. Alaska, College.] With notes on 17 spp.--Courtesy/ Paul A. Stewart.

Winterbottom, J. M. THE BIRDS OF THE CAPE TOWN PUBLIC GARDENS. Ostrich 37 (2): 130-134. June 1966. WR 123: 35
[Univ. Cape Town, Cape Town, South Africa.]

Winterbottom, J. M. THE COMPARATIVE ECOLOGY OF THE BIRDS OF SOME KAROO HABITATS IN THE CAPE PROVINCE. Ostrich 37(2): 109-127, 1 fig. June 1966. WR 123: 35
[Univ. Cape Town, Cape Town, South Africa.]

Winterbottom, J. M. ECOLOGICAL DISTRIBUTION OF BIRDS IN THE INDIGENOUS VEGETATION OF THE SOUTH-WEST CAPE. Ostrich 37(2): 76-91, 1 fig. June 1966. WR 123: 35
[Univ. Cape Town, Cape Town, South Africa.]

BIRDS--POPULATIONS & FLUCTUATIONS

Baker, W. Wilson, and Richard H. Peake. WHIP-POOR-WILL POPULATIONS IN THE LOWER PIEDMONT OF GEORGIA. Oriole 31(2): 15-19. June 1966. WR 123: 35
[Box 4206 Campus Sta., Athens, Ga.] The shift in land use in the Lower Piedmont seems to be contributing to the rapid expansion and range extension of the whip-poor-will populations.--From summ.

Bell, H. L. A POPULATION STUDY OF HEATHLAND BIRDS. Emu 65(4): 295-304, [1 fig.]. Mar. 1966. WR 123: 35
[Taurama Barracks, Port Moresby, Papua.] Study of a ten-acre area of Dry Heath near Sydney, Australia.

Dexter, Ralph W. ANALYSIS OF CHIMNEY SWIFT RETURNS AT KENT, OHIO, IN 1964 AND 1965, WITH NOTES ON A DECLINING NESTING POPULATION. Bird-Banding 37(2): 120-121. Apr. 1966. WR 123: 35
[Kent State Univ., Kent, Ohio.] Courtesy/ Paul A. Stewart.

Enemar, A., S. A. Hanson, and B. Sjostrand. THE COMPOSITION OF THE BIRD FAUNA IN TWO CONSECUTIVE BREEDING SEASONS IN THE FORESTS OF THE AMMARNAS AREA, SWEDISH LAPLAND. Acta Univ. Lundensis Sect. II Med. Math. Sci. Rerum. Nat. 5: 3-11. 1965. [From Biol. Abstr. 47(11), 1966.] WR 123: 35
[Zool. Inst., Lund, Sweden.]

Ferry, C. ÉTUDE D'UNE POPULATION D'HIPPOLAIS POLYGLOTTA À DIJON. [STUDY OF A POPULATION OF MELODIOUS WARBLERS IN DIJON.] Alauda 33(3): 177-205. 1965. [From Bird-Banding 37(2), 1966. In French.] WR 123: 36
A ten-year study.

Harwin, R. M., and Michael P. Stuart Irwin. THE SPREAD OF THE HOUSE SPARROW, PASSER DOMESTICUS, IN SOUTH-CENTRAL AFRICA. Arnoldia 2(24): 1-17, 4 figs. 25 Apr. 1966. WR 123: 36
The house sparrow spread 1000 miles or more in three different directions after being first recorded in the Orange Free State in 1949.

Jordan, R. RESULTADOS DE LOS CENSOS GRÁFICOS DE AVES GUANERAS EFECTUADAS EN NOVIEMBRE 1960 Y ENERO 1962. [RESULTS OF COMPARATIVE CENSUS OF GUANO BIRDS CARRIED OUT IN NOVEMBER 1960 AND JANUARY 1962, IN PERU.] Inst. Invest. Recursos Mar. (Callao) Inform. 12: 1-21, illus. 1963. [From Biol. Abstr. 47 (10), 1966. In Spanish.] WR 123: 36

Jordan, R., and H. Fuentes. RESULTADOS DE LOS CENSOS GRÁFICOS DE AVES GUANERAS EFECTUADAS DURANTE EL CICLO REPRODUCTIVO 1962/1963. [RESULTS OF TWO COMPARATIVE CENSUS(ES) OF GUANO BIRDS CARRIED OUT DURING THE 1962-1963 REPRODUCTIVE CYCLE.] Inst. Invest. Recursos Mar. (Callao) Inform. 22: 1-15, illus. 1964. [From Biol. Abstr. 47(10), 1966. In Spanish.] WR 123: 36

Lebedeva, M. I., and P. P. Shevareva. [BANDING AND TAGGING OF ANIMALS.] Inf. Bull. no. 2, Inst. Zool. Acad. Sci. USSR (Moscow). p. 1-88. 1964. [From Bird-Banding 37(2), 1966. In Russian.] WR 123: 36
There is a table of banding totals for USSR by bird orders for years 1925-1959. Of the total 1,395,029 banded 617,337 were passeres, 417,434 lari, 156,236 anseres, and 98,841 alcids. With a bibliography of 363 titles.

Leslie, P. H. THE INTRINSIC RATE OF INCREASE AND THE OVERLAP OF SUCCESSIVE GENERATIONS IN A POPULATION OF GUILLEMOTS (URIA AALGE PONT.). J. Animal Ecol. 35(2): 291-301. June 1966. WR 123: 36
[Bureau Animal Population, Oxford Univ., Oxford, England.]

Wahlstedt, J. [SIBERIAN NUTHATCHES (SITTA EUROPEA ASIATICA) IN NORRBOTTEN, SWEDEN, 1962-64.] Vår Fågelvärld 24: 172-182. 1965. [From Auk 83(2), 1966. In Swedish with English summ.] WR 123: 36
After a small invasion in 1952, this bird irrupted again in Scandinavia, with a large scale invasion in 1962-63 in Finland and northern Sweden.

BIRDS--ECONOMICS, CONTROL, MORTALITY

Fisher, Harvey I. AIRPLANE-ALBATROSS COLLISIONS ON MIDWAY ATOLL. Condor 68(3): 229-242, 4 figs. May-June 1966. WR 123: 36
[Southern Ill. Univ., Carbondale.] More than 60,000 Laysan albatrosses (Diomedea immutabilis) were clubbed or gassed to death on Sand Island during 1955-1964 in an effort to reduce airplane collisions with the birds. Many eggs and chicks were also destroyed, and more than half of the island has been leveled and paved. "The collision situation in 1960-1961 after four years of the program was nearly twice as bad as in 1956-1957 when the control program was initiated."--Courtesy/ Paul A. Stewart.

Havlin, Jiri. [ECONOMIC IMPORTANCE OF THE BLACKBIRD.] Zool. Listy 14(2): 129-142. 1965. [From Bird-Banding 37(2), 1966. In Czech with English summ.] WR 123: 36
"Turdus merula."

Kemper, Charles A., Dennis G. Raveling, and Dwain W. Warner. A COMPARISON OF THE SPECIES COMPOSITION OF TWO TV TOWER KILLED SAMPLES FROM THE SAME NIGHT OF MIGRATION. Wilson Bull. 78(1): 26-30. Mar. 1966. WR 123: 37
[733 Maple St., Chippewa Falls, Wis.] At Westport, Minn., at the edge of the prairie, fewer wood warblers were killed than at Eau Claire, Wis., in a deciduous woodland area. The Westport sample contained unusually large numbers of yellow warblers (Dendroica petechia), soras (Porzana carolina), mourning warblers (Oporornis philadelphia), and Baltimore orioles (Icterus galbula).--From summ. Courtesy/ Paul A. Stewart.

BIRDS--PARASITES AND DISEASES

Clark, G. W., and B. Swinehart. BLOOD PROTOZOA OF PASSERINE BIRDS OF THE SACRAMENTO (CALIF.) REGION. Bull. Wildl. Disease Assoc. 2(3): 53-54. July 1966. WR 123: 37
[Central Wash. State Coll., Ellensburg.]

Danzan, G. [HELMINTHS FOUND ON DOMESTICATED AND WILD BIRDS IN THE MONGOLIAN PEOPLE'S REPUBLIC.] Trudy Vses. Inst. Gelmintol. 11: 42-44. 1964. [From Biol. Abstr. 47(9), 1966, from Referat. Zhur., Biol., 1965, no. 16K8. Transl. of Russian abstr.] WR 123: 37

Iordachescu-Lazarescu, Dorothea. DONNEES NOUVELLES CONCERNANT LA HELMINTHO-FAUNE DES OISEAUX AQUATIQUES DE ROUMANIE. [NEW DATA ON THE HELMINTHO-FAUNA OF AQUATIC BIRDS OF RUMANIA.] Trav. Mus. Hist. Nat. "Grigore Antipa" 4: 175-180, illus. 1963. [From Biol. Abstr. 47(10), 1966. In French with Romanian and Russian summ.] WR 123: 37

Kale, Herbert W., II, and William L. Jennings. MOVEMENTS OF IMMATURE MOCKINGBIRDS BETWEEN SWAMP AND RESIDENTIAL AREAS OF PINELLAS COUNTY, FLORIDA. Bird-Banding 37(2): 113-120, 1 fig. Apr. 1966. WR 123: 37
[Fla. State Board Health, 4001 Tampa Bay Blvd., Tampa.] Movements of post-fledgling mockingbirds (Mimus polyglottus) into swamps and their subsequent dispersal to residential areas suggests a possible transport mechanism of arboviruses from swamp reservoirs to areas of human habitation during periods of high arbovirus activity. Fifty-one percent of the birds were infected with an avian pox virus.--From summ. Courtesy/ Paul A. Stewart.

Threlfall, William. STUDIES ON THE BLOOD OF HERRING GULLS AND DOMESTIC FOWL WITH SOME OBSERVATIONS ON CHANGES BROUGHT ABOUT BY INFECTION WITH CYATHOSTOMA LARI BLANCHARD, 1849 (NEMATODA; STRONGYLOIDEA). Bull. Wildl. Disease Assoc. 2(3): 41-51. July 1966. WR 123: 37
[Memorial Univ. Newfoundland, St. John's, Canada.]

GAME BIRDS--GENERAL

Holman, J. A. OSTEOLOGY OF GALLINACEOUS BIRDS. Quart. J. Fla. Acad. Sci. 27(3): 230-252. 1964. [From Biol. Abstr. 47(11), 1966.] WR 123: 37
[Ill. State Univ., Normal.]

Hudson, George E., Richard A. Parker, James Vanden Berge and Patricia J. Lanzillotti. A NUMERICAL ANALYSIS OF THE MODIFICATIONS OF THE APPENDICULAR MUSCLES IN VARIOUS GENERA OF GALLINACEOUS BIRDS. Am. Midland Nat. 76(1): 1-73. July 1966. WR 123: 37
[Wash. State Univ., Pullman.] Gross morphology of the wing and leg muscles was studied in representatives of 35 genera, including all families, subfamilies and Opisthocomus.--From abstr.

Uspenskii, S. [BIRDS OF THE ORDER GALLIFORMES.] Okhota & Okhotnich'e Khoz. 12: 18-21. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 8I188. Transl. of Russian abstr.] WR 123: 38
A short description of the Galliformes of the USSR.

QUAIL

Beach, F. A., and N. G. Inman. EFFECTS OF CASTRATION AND ANDROGEN REPLACEMENT ON MATING IN MALE QUAIL. Proc. Natl. Acad. Sci. 54: 1426-1431. 1965. [From Auk 83(2), 1966.] WR 123: 38
"Coturnix coturnix japonica."

El-Ibiary, H. M., E. F. Godfrey, and C. S. Shaffner. CORRELATIONS BETWEEN GROWTH AND REPRODUCTIVE TRAITS IN THE JAPANESE QUAIL. Poultry Sci. 45(3): 463-469. May 1966. WR 123: 38
[Faculty Agr., Camp Cesar P. O., Alexandria, United Arab Republic.]

Kazutaka, Homma, Thomas D. Siopes, Wilbor O. Wilson, and Larry Z. McFarland. IDENTIFICATION OF SEX OF DAY-OLD QUAIL (COTURNIX COTURNIX JAPONICA) BY CLOACAL EXAMINATION. Poultry Sci. 45(3): 469-472, 2 figs. May 1966. WR 123: 38
[Nagoya Univ., Nagoya, Japan.]

PHEASANTS

Gabuzov, O. [PHEASANTS IN THE MOSCOW VICINITY.] Okhota & Okhotnich'e Khoz. 6: 56. 1959. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1960, no. 40258. Transl. of Russian abstr.] WR 123: 38

Gates, John M., and Gary E. Ostrom. FEED GRAIN PROGRAM RELATED TO PHEASANT PRODUCTION IN WISCONSIN. J. Wildl. Mgmt. 30(3): 612-617. July 1966. WR 123: 38
[Wis. Conserv. Dept., Waupun.] Abstract: A pheasant (Phasianus colchicus) nesting study was conducted on 12 square miles of intensively farmed land in east-central Wisconsin during 1961-64. Under the Government Feed Grain Program during this period, 4.3 percent of the area was retired from agricultural production, of which about half was occupied by cover types suitable for pheasant nesting. At least a 10-percent increase in pheasant production could be attributed to the Program. Nest densities and hatching success on Program lands equaled or exceeded those in other cover types. On the average, 17 percent of the area's successful nests were located in retired cropland. To improve pheasant production on such lands, it is recommended (1) that quantity and quality of nesting cover be increased; (2) that clipping be delayed until after mid-July and only necessary clipping be done; and (3) that longer-term contracts for land retirement be provided.

Loveless, C. M., and G. Bear. NOTES ON THE FOOD HABITS OF THE KOREAN PHEASANT. Auk 83(2): 311-313. Apr. 1966. WR 123: 38
[Denver Wildl. Res. Center, Denver, Colo.] A report on the contents of 11 crops and 17 gizzards of Phasianus colchicus karpowi collected in Korea.--Courtesy/ Paul A. Stewart.

Pulliainen, Erkki. CANNIBALISM IN THE PHEASANT (PHASIANUS COLCHICUS L.) DURING THE EGG-LAYING PERIOD. Ann. Zool. Fennici 2(3): 208-214, illus. 1965. [From Biol. Abstr. 47(11), 1966.] WR 123: 38
[Univ. Helsinki, Helsinki, Finland.]

Wagner, Frederic H., C. D. Besadny, and Cyril Kabat. POPULATION ECOLOGY AND MANAGEMENT OF WISCONSIN PHEASANTS. Wis. Conserv. Dept., Tech. Bull. no. 34. 168 p., 71 figs. 1965. WR 123: 39
[Utah State Univ., Logan.] This report synthesizes data from extensive pheasant population surveys in Wis. and integrates these with the existing knowledge of the species and suggests possible mechanisms and causes of: (1) short-term fluctuations, (2) population balance, and (3) determination of long-term mean density in any given area. The management implications which follow from these views are set forth. The focus is on Wis. pheasants, but the conclusions may apply more widely over the Midwest and elsewhere.--From abstr.

GROUSE, PARTRIDGE, ETC.

Baziev, Zh. Kh. [REPRODUCTION OF THE CASPIAN SNOWPARTRIDGE (TETRAOGALLUS CAUCASICUS). Zool. Zhur. 44(8): 1219-1227, illus. 1965. [From Biol. Abstr. 47(12), 1966. In Russian with English summ.] WR 123: 39
[Moscow State Univ., Moscow, USSR.]

Dorney, Robert S. A NEW METHOD FOR SEXING RUFFED GROUSE IN LATE SUMMER. J. Wildl. Mgmt. 30(3): 623-625. July 1966. WR 123: 39
[Pan American Union, Washington, D.C.] Abstract: The need for objective criteria to determine the sex of molting ruffed grouse (Bonasa umbellus) in late summer (juveniles 13 weeks or older, and adults) led me to measure the length of a single barb of the central tail feather at a point 50 mm from the tip of the tail. In a sample of 1,518 birds whose sex and age were determined by plumage characteristics, I found that sex of individual grouse whose barb measurements fell outside the overlap (middle) size range could be determined by barb length, with an error of about 1-4 percent. Birds with barb length outside the overlap range comprised about two-thirds of the adults and one-half of the juveniles.

Krüger, P. ÜBER DIE EINWIRKUNG DER TEMPERATUR AUF DAS BRUTGESCHÄFT UND DAS EIERLEGEN DES RABHUHNES (PERDIX PERDIX L.). [ON THE INFLUENCE OF TEMPERATURE ON THE BREEDING ACTIVITIES AND EGG-LAYING OF THE PARTRIDGE (PERDIX PERDIX L.).] Acta Zool. Fennica 112: 1-64. 1965. [From Auk 83(2), 1966. In German.] WR 123: 39

Pulliainen, Erkki. PELTOPYYN TALVISESTA KÄYTTÄYTYMISESTÄ. [BEHAVIOUR OF THE PARTRIDGE (PERDIX PERDIX) IN WINTER.] Suomen Riista 18: 20-29, 8 figs. 1966. In Finnish with English summ. WR 123: 39

Pulliainen, Erkki. PELTOPYYN SYKSYISESTÄ JA TALVISESTA RAVINNOSTA. [FOOD HABITS OF THE PARTRIDGE (PERDIX PERDIX) IN AUTUMN AND WINTER.] Suomen Riista 18: 117-132, 3 figs. 1966. In Finnish with English summ. WR 123: 39

Rodionov, M. A. [MOLTING AND DEVELOPMENTAL CHARACTERISTICS OF THE BLACK GROUSE (LYRURUS TETRIX L.).] Uch. Zap. Leningr. Gos. Pedagog. Inst. Im. A. I. Gertsena 230: 167-178. 1963. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 6I64. Transl. of Russian abstr.] WR 123: 39

Zubkov, A. [THE COMMON PARTRIDGE (PERDIX PERDIX).] Sel'skokhoz. Proizv. Sibiri Dal'nego Vost. 5: 84. 1964. [From Biol. Abstr. 47(12), 1966, from Referat. Zhur., Biol., 1965, no. 1I246. Transl. of Russian abstr.] WR 123: 39
Notes on the distribution and food of the common partridge in Western Siberia.

TURKEY

Gooden, Sam. SOME PROBLEMS IN WILD TURKEY MANAGEMENT IN NORTH CAROLINA. PART 2. Wildl. in N.C. 29(4): 10-12, illus. Apr. 1965. WR 123: 40

[201 Oakgrove Dr., Graham, N.C.] "In summary, there are many factors other than deficiencies in range or habitat which have adverse effects on wild turkey populations. Among the more important ones are illegal hunting, diseases, insecticides, weather, and even restocking with pen-raised birds. None of these factors is easily corrected; but we can make a good start by understanding them and working together." [See WR 117: 55 for Part 1.]

Jonas, Robert. MERRIAM'S TURKEYS IN SOUTHEASTERN MONTANA. Mont. Fish & Game Dept., Tech. Bull. no. 3. 35 p., 17 figs. Apr. 1966. WR 123: 40

[Univ. Idaho, Moscow.] Doctorate thesis from Mont. State Univ. Information on movements, population characteristics, habitat use and life history of Meleagris gallopava merriami in the northern extension of its range.

Lewis, John B., and Robert P. Breitenbach. BREEDING POTENTIAL OF SUBADULT WILD TURKEY GOBBLERS. J. Wildl. Mgmt. 30(3): 618-622. July 1966. WR 123: 40

[Mo. Dept. Conserv., Columbia.] Abstract: Testes were collected from adult and subadult eastern wild turkey gobblers (Meleagris gallopava silvestris) killed during Missouri's spring turkey seasons of 1964 and 1965, in order to determine the breeding potential of the subadult gobblers. Subadults were separated from adults on the basis of weight, spur and beard length, and retention of the 9th and 10th juvenile primaries. Rectrix replacement and progress of the postjuvenile or annual molt were helpful in separating age groups. A positive relationship was found between the predominant stage of spermatogenesis and testis weight of subadults. Testes weighing 7 g or more always showed spermatids, but those weighing less than 4 g never showed spermatozoa as the predominant stage. Bursa depths were shallower in birds exhibiting advanced stages of spermatogenesis, but spur length and beard length showed no relation to the stage of spermatogenesis. The sample taken from the testes of subadult gobblers shot during the 1964 and 1965 turkey seasons showed 28 percent (14 of 50) which possessed mature sperm. These data imply that these subadults could be capable of breeding.

DOVES AND PIGEONS

Grimes, J. E., Thelma D. Sullivan, and J. V. Irons. RECOVERY OF ORNITHOSIS AGENT FROM NATURALLY INFECTED WHITE-WINGED DOVES. J. Wildl. Mgmt. 30(3): 594-598. July 1966. WR 123: 40

[Texas A & M Univ., College Station.] Abstract: Tissues and blood samples were collected from wild white-winged doves (Zenaida asiatica) during August, 1959 and 1961, soon after unusual die-offs among these birds in the Lower Rio Grande Valley of Texas. An agent belonging to the psittacosis-lymphogranuloma-trachoma (PLT) group of large viruses was recovered from tissues of 6 of 13 doves found dead or moribund in 1959 and from an obviously ill juvenile dove in 1961. The agent was identified by examining microscopically the tissues of experimentally infected animals and embryonated eggs and by complement-fixation tests on pre- and post-inoculation sera of guinea pigs and turkeys. One of seven dove sera was reactive in the indirect complement-fixation test, indicating prior exposure to this virus. This is believed to be the first report of naturally occurring ornithosis in this species of bird. It is suggested that the ornithosis agent was directly implicated in the 1959 and 1961 die-offs of juvenile doves and that further epizootiological studies are needed.

Irby, Harold D., and Lytle H. Blankenship. BREEDING BEHAVIOR OF IMMATURE MOURNING DOVES. J. Wildl. Mgmt. 30(3): 598-604. July 1966. WR 123: 40

[Patuxent Wildl. Res. Station, c/o Texas Parks & Wildl. Dept., Rockport.] Abstract: Some immature mourning doves (Zenaidura macroura) are capable of breeding in their first (calendar) year of life. The breeding activities of immatures observed in this study included calling, copulating, and nesting.

Development of sexual structures such as cloacal papillae, oviduct openings, and gonads was also regarded as evidence of breeding potential. Immatures were identified principally by white-tipped wing coverts. Sexes were distinguished by behavioral characteristics. Males coo, perform flights, carry nest material, and attend nests during the day and females attend nests at night. Immatures were involved in at least ten nestings on two areas near Tucson, Arizona, in 1963. Five young fledged from these nests.

Lehner, Philip N. SOME OBSERVATIONS ON THE ECOLOGY OF THE MOURNING DOVE IN NEW YORK. N.Y. Fish & Game J. 12(2): 147-169, 8 figs. July 1965. WR 123: 41
[N.Y. Coop. Wildl. Res. Unit, Cornell Univ., Ithaca.] Abstract: Observations on the ecology of the mourning dove, based largely on 180 specimens collected from March through October in 1963, were made in Tompkins County (N.Y.). Data on their age, sex, size, food habits and breeding condition were recorded. Information on range conditions and distribution and abundance were also gathered. Available records indicate a slightly rising population, but no section of the State supports populations comparable to those found in the better habitats in other parts of the United States. Doves were closely associated with farmland, particularly that devoted to small grains the acreage of which is decreasing. The chief foods eaten were wheat, corn, buckwheat, yellow bristlegrass and ragweed in that order. Food consumption was greatest from 6 p.m. to sundown. Nesting was at its height in early May, but it occurred throughout the summer and continued into September after many doves had migrated. Late nesting, early migration and a low wintering population are unfavorable to the prospect of dove hunting in New York.

Lofts, B., and R. K. Murton. THE ROLE OF WEATHER, FOOD AND BIOLOGICAL FACTORS IN TIMING THE SEXUAL CYCLE OF WOODPIGEONS. British Birds 59(7): 261-280. July 1966. WR 123: 41
[St. Bartholomew's Hospital Med. Coll., West Smithfield, England.] The results do not implicate any single factor as being of over-riding importance in regulating spermatogenesis throughout the whole of the winter and spring, but rather that different proximate factors had differing degrees of significance at different times, the final development of the gonad depending on the combined effect of all the stimuli. Unlike the males, the females were unaffected by variations in environmental stimuli and appeared to have an autonomous cycle until about April. This is attributed to the fact that, for appropriate seasonal breeding, males must find and establish territories as soon as possible, whereas females need only respond to male stimulation once territories are established.--From summ.

Murton, R. K., A. J. Isaacson, and N. J. Westwood. THE RELATIONSHIPS BETWEEN WOOD-PIGEONS AND THEIR CLOVER FOOD SUPPLY AND THE MECHANISM OF POPULATION CONTROL. J. Appl. Ecol. 3(1): 55-96, 9 figs. May 1966. WR 123: 41
[Min. Agr., Fisheries & Food, Tangley Place, Worplesdon, Surrey, England.]

Murton, R. K., and N. J. Westwood. THE FOODS OF THE ROCK DOVE AND FERAL PIGEON. Bird Study 13(2): 130-146, 2 figs. June 1966. WR 123: 41
[Min. Agr., Fisheries & Food, Tangley Place, Worplesdon, Surrey, England.] The study showed that the rock dove has the same food requirements as the stock dove (Columba oenas) and inter-specific competition could be expected in areas of range overlap. The decline of the wild rock dove in Britain since 1800 is mostly attributed to the spread of the stock dove over the same period with resultant competition, the spread and increase of the latter species being mediated by changes and increases in arable farming. The past status of the dovecote pigeon in Britain is also considered. Its decline since 1800 has been suggested as a factor enabling the stock dove to increase, but this view is rejected and the reasons are discussed. Unlike the situation with the wild rock dove it seems that the dovecote declined as a direct consequence of man's need for modern and more efficient farming. Thus the agricultural improvements that led directly to a decline in the meat value of the dovecote pigeon, indirectly but quite independently created an environment favorable to the stock dove. Direct inter-specific competition has probably hardly arisen between the dovecote pigeon and stock dove.--From summ.

Willoughby, Ernest J. WATER REQUIREMENTS OF THE GROUND DOVE. Condor 68(3): 243-248, 3 figs. May-June 1966. WR 123: 42

[Syracuse Univ., Syracuse, N.Y.] The mean ad libitum consumption of distilled water was 11.4 per cent of body weight per day, and the mean minimum requirement of four individuals was 9.7 ± 1.5 per cent of body weight per day. The maximum NaCl concentration that ground doves could utilize was near 0.15 M. With increasing molarity of NaCl from 0.1 to 0.2, drinking responses became increasingly variable. Ad libitum water consumption increased approximately threefold from 30° to 40° C.--From summ. Courtesy/ Paul A. Stewart.

WATERFOWL

Boyd, Hugh, and Eric Fabricius. OBSERVATIONS ON THE INCIDENCE OF FOLLOWING OF VISUAL AND AUDITORY STIMULI IN NAIVE MALLARD DUCKLINGS (ANAS PLATYRHYNCHOS). Behaviour 25(1-2): 1-15, 2 figs. 1965. In English with German summ. WR 123: 42

[Wildfowl Trust, Slimbridge, Gloucestershire, England.]

Bradshaw, Judith E., and D. O. Trainer. SOME INFECTIOUS DISEASES OF WATERFOWL IN THE MISSISSIPPI FLYWAY. J. Wildl. Mgmt. 30(3): 570-576. July 1966. WR 123: 42

[Univ. Wis., Madison.] Abstract: To establish the presence of selected infectious diseases in a "healthy" wild waterfowl population, a serologic and parasitologic study was initiated. Sera from 123 Canada geese (primarily Branta canadensis interior) and 179 mallards (Anas platyrhynchos) were screened for antibodies against six arboviruses. There was no neutralizing antibody detected against western viral encephalitis, eastern viral encephalitis, St. Louis viral encephalitis, Venezuelan viral encephalitis, California viral encephalitis, or vesicular stomatitis. Sera from 55 ducks and 12 geese were negative for agglutinating antibodies to Salmonella pullorum, Salmonella typhimurium, and Mycoplasma gallisepticum. Fifty-five duck sera and 11 goose sera were negative for complement-fixing antibodies of ornithosis. The most significant serologic finding was the presence of Newcastle disease antibody. Forty (17 percent) of 236 Canada geese were positive for Newcastle disease antibody. Thirty-seven (14 percent) of 267 mallard ducks had antibody titers for Newcastle disease virus. A limited study of parasitism revealed a low prevalence of Haemoproteus, Leucocytozoon, and microfilariae in both geese and mallards as well as Plasmodium in wild geese. The significance of the serological and parasitological findings is discussed.

Duebbert, Harold F. ISLAND NESTING OF THE GADWALL IN NORTH DAKOTA. Wilson Bull. 78(1): 12-25, 2 figs. Mar. 1966. WR 123: 42

[Malheur Natl. Wildl. Refuge, Burns, Oreg.] A 7-acre island contained 121 gadwall (Anas strepera) nests. Nesting success of 109 nests was 92.7%. The average clutch size of incubated clutches was 9.5 in 1956 and 9.7 in 1957. The nesting period spanned 7 to 9 weeks from first laying to last hatching and was longer on the nearby mainland than on the island.--From summ. Courtesy/ Paul A. Stewart.

Grice, David, and John P. Rogers. THE WOOD DUCK IN MASSACHUSETTS. Mass. Div. Fisheries & Game, Final Rept. Proj. no. W-19-R. iii + 96 p., 14 figs. + unnumbered photos. 30 Nov. 1965. WR 123: 42

Based on an intensive study conducted during 1950-1956. Special attention is given to migrational homing, nesting production, juvenile survival and adult mortality.

Hankla, Donald J., and Vernon E. Carter. WHAT HAPPENS TO WOOD DUCK HABITAT? Wildl. in N.C. 30(3): 4-7, illus. Mar. 1966. WR 123: 42

[Bur. Sport Fisheries & Wildl., Atlanta, Ga.] A review of some programs of public and private land and water management agencies that adversely affect wood duck habitat. These adverse habitat factors include drainage, cleaning, flood control, pollution and forest management.

Hildén, Olavi. ECOLOGY OF DUCK POPULATIONS IN THE ISLAND GROUP OF VALASSARET, GULF OF BOTHNIA. Ann. Zool. Fenn. 1(3): 153-279. 1964. [From Bird-Banding 37(2), 1966.] WR 123: 43

Jahn, Laurence R., and Richard A. Hunt. DUCK AND COOT ECOLOGY AND MANAGEMENT IN WISCONSIN. Wis. Conserv. Dept., Tech. Bull. no. 33. 212 p., 68 figs. 1964. WR 123: 43

[129 Juneau St., Horicon, Wis.] This report presents the results of intensive population investigations to develop guidelines for managing seasonal duck and coot populations. Wis. has an estimated 1,170,698 acres of inland aquatic habitat important to ducks and coots, in addition to 9,878 square miles of Great Lakes waters. The average yearly breeding duck population is estimated at 133,500 to 280,500 and duckling production at 217,100 to 456,300 (1949-50). Indicated statewide densities per square mile were 2.6 breeding pairs of ducks and 0.5 of coot. Productivity of ducks on the better quality Wis. wetlands balanced or exceeded the total mortality. Chronology of fall duck use for each species using Wis. was shown for a nine-year period; the pattern was similar among years but varied among species. Statewide, the bulk of the ducks and coots were present between Oct. 10 and Nov. 10. Migration of adult female ducks appeared to coincide with the Wis. hunting season and resulted in a disproportionately heavy harvest of hens from many species. Sixteen management recommendations are offered.--From abstr.

Jarvis, Robert L. OCCURRENCE OF EUROPEAN OR ALEUTIAN GREEN-WINGED TEAL IN WESTERN NORTH AMERICA, WITH A RECENT RECORD. Murrelet 47(1): 15-18, 1 fig. Jan.-Apr. 1966. WR 123: 43

[Southern Ill. Univ., Carbondale.]

Johnson, Oscar W. QUANTITATIVE FEATURES OF SPERMATOGENESIS IN THE MALLARD (ANAS PLATYRHYNCHOS). Auk 83(2): 233-239, 2 figs. Apr. 1966. WR 123: 43

[Moorehead State Coll., Moorehead, Minn.] An objective technique, earlier developed by H. W. Chalkley, was used to study the testicular cycle of mallards. Leydig cells appeared to be most abundant in early phases of the gonadal cycle. --Courtesy/ Paul A. Stewart.

Johnson, Steve R., and Charles F. Yocom. BREEDING WATERFOWL IN THE LAKE EARL-LAKE TALAWA AREA, DEL NORTE COUNTY, CALIFORNIA. Murrelet 47(1): 1-5, 1 fig. Jan.-Apr. 1966. WR 123: 43

[Humboldt State Coll., Arcata, Calif.]

Kuyt, Ernie. FURTHER OBSERVATIONS ON LARGE CANADA GEESE MOULTING ON THE THELON RIVER, NORTHWEST TERRITORIES. Canadian Field-Nat. 80(2): 63-69, 1 fig. Apr.-June 1966. WR 123: 43

[Canadian Wildl. Serv., Fort Smith, Northwest Territories.]

Lowe, V. T. NOTES ON THE MUSK-DUCK BIZIURA LOBATA. Emu 65(4): 279-290, [4 figs.]. Mar. 1966. WR 123: 43

[Mystic Park, Victoria, Australia.] Notes on flocking, displays, flights, voice and breeding habits of the musk-duck.

Lund, H. Munthe-Kaas. OM TELLING AV ANDEFUGLER OM VINTEREN. [COUNTING ANSERIFORMES DURING WINTER IN NORWAY.] Sterna (Stavenger Museum) 6(6): 301-308, illus., map. 1965. [From Biol. Abstr. 47(13), 1966. In Norwegian with English summ.] WR 123: 43

[Stavenger Museum, Stavenger, Norway.]

MacInnes, C. D. POPULATION BEHAVIOR OF EASTERN ARCTIC CANADA GEESE. J. Wildl. Mgmt. 30(3): 536-553, 2 figs. July 1966. WR 123: 43

[Univ. Western Ontario, London, Ontario, Canada.] Abstract: The Canada geese (hutchinsii-parvipes complex of Branta canadensis) which nest in arctic Canada east of 104° W have developed a complex system which enables the population to survive and expand its range under the changing ecological conditions

of its present breeding grounds. The population has an irregular migration pattern, dependent in part on the presence of green vegetation at favored stopover points. Sight records of neckbanded geese indicate that birds from one nesting locality spread throughout the migration range and mix freely with birds from other nesting areas. This population probably pairs in spring, with the peak of sexual activity occurring during the later stages of northward migration, when geese from many nesting localities are mixed together. Measurements of 17 mated pairs indicate that mating is assortative; the male of the pair was always larger than the female even though large females were available in the population. In samples taken at McConnell River and Southampton Island, Northwest Territories, significant differences were found between the means and variances of morphological characters measured, yet the ranges of observed variation were very similar. Most habitat presently occupied by Canada geese in eastern arctic Canada is of very recent geologic origin, and the climate is undergoing long-term amelioration. Length of the summer season is critical in limiting the survival of geese. Because larger geese probably are less successful than smaller geese in producing young in short summers, but more productive in long seasons, populations living in more severe climate should contain a higher proportion of small geese. It is proposed that the transfer of individuals between local nesting areas, coupled with selective mating and individual variation, are mechanisms which may improve the average survival of Canada geese in a variable and fluctuating environment.

McGilvrey, Frank B. SECOND NESTINGS OF THE WOOD DUCK. Auk 83(2): 303. Apr. 1966. WR 123: 44

[Patuxent Wildl. Res. Center, Laurel, Md.] Two new cases are reported of Aix sponsa females rearing two broods in a year.--Courtesy/ Paul A. Stewart.

McGilvrey, Frank B. FALL FOOD HABITS OF DUCKS NEAR SANTEE REFUGE, SOUTH CAROLINA. J. Wildl. Mgmt. 30(3): 577-580. July 1966. WR 123: 44

[Patuxent Wildl. Res. Center, Laurel, Md.] Abstract: During the 1961 waterfowl hunting season, 360 stomachs of 10 duck species were collected from hunters near the Santee National Wildlife Refuge, Lake Marion, South Carolina. Based on percentage of total volume, 20 of the most important foods are listed. The six most important duck species in the kill were: mallard (Anas platyrhynchos), wood duck (Aix sponsa), widgeon (Mareca americana), pintail (Anas acuta), black duck (Anas rubripes), and green-winged teal (Anas carolinensis). Six plant species made up 5 percent or more of the total volume of food items found in the stomachs of all ducks. Only seeds of oaks (Quercus sp.), corn, sweet gum (Liquidambar styraciflua), and buttonbush (Cephalanthus occidentalis) were consumed. Some seed, but mostly the vegetative portions of hydrochloa (Hydrochloa carolinensis) and only the vegetative portions of southern rice cutgrass (Leersia hexandra) were taken. The more important game ducks concentrated on the refuge farmlands when water levels were below 72 feet mean sea level (msl). When levels reached 75 feet msl, natural foods became available, ducks dispersed from refuge areas, and hunting success increased greatly.

McKinney, F. THE COMFORT MOVEMENTS OF ANATIDAE. Behaviour 25(1-2): 120-220, 18 figs. + 18 pls. 1965. In English with German summ. WR 123: 44

[Minn. Museum Nat. Hist., Minneapolis.] The comfort movements of Anatidae are described in detail on the basis of observations on 114 species including representatives of all tribes except the torrent ducks (Merganetta). Comfort movements are classified into seven broad categories: shaking movements, stretching movements, cleaning movements, oiling preening, nibbling preening, washing, and bathing.--From summ.

Nickell, Walter P. BEHAVIOR OF BARROW'S GOLDENEYE IN WYOMING. Wilson Bull. 78(1): 121-122, 1 fig. Mar. 1966. WR 123: 45
(Cranbrook Inst. Sci., Bloomfield Hills, Mich.] Two ducklings, "not more than one-week old," were captured and kept in confinement until the following day. The two ducklings soon attempted to join their mother and remaining brood mates when released onto the water but were repelled by the mother. The two ducklings remained separate from the brood but were doing "as well in their growth as the young under the care of the female" during the following 10 days. --Courtesy/ Paul A. Stewart.

Nilsson, Leif. IAKTTAGELSER ÖVER SMÅSKRAKENS (MERGUS SERRATOR) BETEENDE UNDER VÅREN. [NOTES ON THE BEHAVIOR OF THE RED-BREASTED MERGANSER IN SPRING.] Vår Fågelvärld 24: 244-256. 1965. [From Bird-Banding 37(2), 1966. In Norwegian with English summ.] WR 123: 45

Nyholm, Erik S. ECOLOGICAL OBSERVATIONS ON THE GEESE OF SPITSBERGEN. Ann. Zool. Fennici 2(3): 197-207, illus., map. 1965. [From Biol. Abstr. 47(11), 1966.] WR 123: 45

Oring, Lewis Warren. BREEDING BIOLOGY AND MOLTS OF THE GADWALL, ANAS STREPERA LINNAEUS. Ph.D. thesis, Univ. Okla. 103 p. 1966. [From Dissertation Abstr. 26(11), 1966.] WR 123: 45

Phersson, Olof. STUDIER ÖVER RASTANDE OCH ÖVERVINTRANDE SJÖFÅGEL I SÖDRA BOHUSLÄNS INRE SKÄRGÅRD. [A STUDY ON RESTING AND WINTERING WATERFOWL IN THE INNER ARCHIPELAGO OF SOUTHERN BOHUSLAN.] Vår Fågelvärld 24: 107-132. 1965. [From Bird-Banding 37(2), 1966. In Swedish with English summ.] WR 123: 45

Pirkola, Matti K. SINISORSAN RAVINNOSTA MAHA-ANALYYSIEN VALOSSA. [ON THE FEEDING HABITS OF THE MALLARD (ANAS PLATYRHYNCHOS) AS REVEALED BY CROP AND GIZZARD SAMPLES.] Suomen Riista 18: 67-81, 3 figs. 1966. In Finnish with English summ. WR 123: 45

Prestt, Ian, and D. H. Mills. A CENSUS OF THE GREAT CRESTED GREBE IN BRITAIN 1965. Bird Study 13(2): 163-203, 3 figs. June 1966. WR 123: 45
[Monks Wood Exptl. Sta., Huntingdon, England.] The results indicate that Podiceps cristatus was more numerous in Britain in 1965 than it was in 1931, there now being 4132 to 4737 individuals compared to 2824 to 2842. This census followed a report of relatively high residues of organochlorine insecticides being found in this species.

Tiussa, Jouko. VESILINTUJEMME RAVINNONKÄYTÖSTÄ SISÄMAASSA. [FOOD HABITS OF SOME WILDFOWL SPECIES IN THE INLAND WATERS.] Suomen Riista 18: 42-49, 3 figs. 1966. In Finnish with English summ. WR 123: 45
"Anas platyrhynchos, A. crecca, Bucephala clangula, Aythya marila, Clangula hyemalis and Melanitta nigra."

Townsend, Gerald H. A STUDY OF WATERFOWL NESTING ON THE SASKATCHEWAN RIVER DELTA. Canadian Field-Nat. 80(2): 74-88, 5 figs. Apr.-June 1966. WR 123: 45
[Univ. Wis., Madison.] Methods of study, phenology of nesting, waterfowl arrival, dates of nest initiation, average hatching dates, general nest data, nesting success, and management are the major topics of discussion.

Waaramäki, Tauno. HAVAINTOJA PILKKASIIVEN ESIINTYMISESTÄ OULANKAJOEN VESISTÖALUEELLA. [OCCURRENCE OF THE VELVET SCOTER (MELANITTA FUSCA) IN THE OULANKA RIVER BASIN, NORTH-EAST FINLAND.] Suomen Riista 18: 94-100, 3 figs. 1966. In Finnish with English summ. WR 123: 45

Wheeler, Richard J. AN UNUSUALLY LONG INCUBATION PERIOD OF THE MALLARD. Condor 68(3): 301. May-June 1966. WR 123: 45
[Humboldt State Coll., Arcata, Calif.] A female mallard (Anas platyrhynchos) incubated a clutch of eggs at least 47 days without any ducklings hatching.--Courtesy/ Paul A. Stewart.

Wick, William Q., and Robert G. Jeffrey. POPULATION ESTIMATES AND HUNTER HARVEST OF DIVING DUCKS IN NORTHEASTERN PUGET SOUND, WASH. Murrelet 47(2): 23-32, 6 figs. May-Aug. 1966. WR 123: 46

[Oreg. State Univ. Coop. Ext. Serv., Corvallis.] Diving duck populations and harvest in Northeastern Puget Sound, Washington, were studied on a spare time basis from 1947-64. We found that divers total about one-third of the waterfowl population but make up less than 4% of the hunter harvest. Scoters, scaups, buffleheads, and goldeneyes formed nearly 97% of the sampled population of divers. Total numbers, by species, varied each year but relative abundance of the major groups remained comparable. Information on 11 species groups of divers was presented.--From summ.

Winterbottom, J. M. SOME NOTES ON THE RED-KNOBBED COOT FULICA CRISTATA GMELIN IN SOUTH AFRICA. Ostrich 37(2): 92-94. June 1966. WR 123: 46

[Univ. Cape Town, Cape Town, South Africa.] Status, breeding seasons, egg size, clutch size, incubation period and nesting success.

Yastrebov, K. [THE DECREASE IN THE NUMBERS OF WILD WATER FOWL.] Okhota & Okhotnich'e Khoz. 11: 18-21. 1959. [From Biol. Abstr. 47(10), 1966, from Referat. Zhur., Biol., 1960, no. 61168. Transl. of Russian abstr.] WR 123: 46

Yocom, Charles F., and Stanley W. Harris. GROWTH RATES OF GREAT BASIN CANADA GEESE. Murrelet 47(2): 33-37, 3 figs. May-Aug. 1966. WR 123: 46

[Humboldt State Coll., Arcata, Calif.] Abstract: Measurements were taken of weight, culmen length, and tarsus length on 7 male and 5 female captive-reared Great Basin Canada geese (Branta canadensis moffitti Aldrich) representing 3 distinct geographical populations. Rates of weight-increase were highest at the age of 4 to 6 weeks and declined markedly after 8.5 weeks. The maximum culmen growth occurred during the second and third weeks of life and was essentially completed by the tenth week. The greatest tarsus growth was during the first 4 weeks of life and complete by the seventh week.

CRANES, RAILS, SHOREBIRDS

Blaker, D. NOTES ON THE SANDPLOVERS CHARADRIUS IN SOUTHERN AFRICA. Ostrich 37(2): 95-102, 1 fig. June 1966. WR 123: 46

[Univ. Cape Town, Cape Town, South Africa.] Distribution, movements and breeding biology of 5 spp. of sandplovers.

Coulson, J. C. THE INFLUENCE OF THE PAIR-BOND AND AGE ON THE BREEDING BIOLOGY OF THE KITTIWAKE GULL RISSA TRIDACTYLA. J. Animal Ecol. 35(2): 269-279. June 1966. WR 123: 46

[Univ. Durham, Durham, England.] Based on a 12-year study. About 64% of the birds retained their mate from the previous breeding season, but older birds tended to change their mates less frequently than young birds. Of the birds which changed their mate, a third changed because their partner from the previous breeding season had died, but the mates of the remaining two-thirds were still present in the colony. A female which retained her mate from the previous breeding season bred earlier, laid more eggs and had a greater breeding success than one which had paired with a new male. Further, a female which retained the mate from the previous breeding season showed more consistency in time of egg laying. The depressive effect on the breeding biology induced by the change of mate was apparent for at least two breeding seasons after the change took place, the effect being less pronounced in the second year. It is suggested that there is a marked selective value in retaining the same mate from one breeding season to the next, but that in incompatible pairs (which fail to hatch their eggs) there is more advantage in changing mates as by so doing they are more likely to breed successfully.--From summ.

Coulson, J. C. THE MOVEMENTS OF THE KITTIWAKE. Bird Study 13(2): 107-115, 3 figs. June 1966. WR 123: 47
[Durham Univ., Durham, England.]

Johnston, R. TERN TRAPPED BY COCKLE. British Birds 59(2): 75-76, 1 fig. Feb. 1966. WR 123: 47
"Sterna hirundo."

Kokhanov, V. D. [EFFECT OF THE NESTING FEATURES OF SANDPIPERS (CHARADRIIFORMES) ON THE TIME AND NATURE OF THEIR AUTUMNAL MIGRATIONS.] Zool. Zhur. 44 (5): 784-787. 1965. In Russian with English summ.] WR 123: 47

Lebedeva, M. I. [SHOREBIRD MIGRATION ACCORDING TO BANDING RECORDS.] Ornitologiya 7: 328-340. 1965. [From Bird-Banding 37(2), 1966. In Russian.] WR 123: 47

Leffler, Sanford R. OBSERVATIONS ON A CAPTIVE NORTHERN PHALAROPE. Wilson Bull. 78(1): 124-125. Mar. 1966. WR 123: 47
[1398 Geneva St., San Carlos, Calif.] Observations on posture, locomotion, defensive behavior, feeding, and care of captive Lobipes lobatus.--Courtesy/ Paul A. Stewart.

Miller, Richard S., and W. J. D. Stephen. SPATIAL RELATIONSHIPS IN FLOCKS OF SANDHILL CRANES (GRUS CANADENSIS). Ecology 47(2): 323-327. Early Spring 1966. WR 123: 47
[Univ. Saskatchewan, Saskatoon.] Distance to nearest neighbor for a total of 1,326 individuals in 29 flocks varying in size from 3 to 252 birds had a mean value of 5.79 ± 0.16 ft and was remarkably uniform, regardless of flock size.--From abstr. Courtesy/ Paul A. Stewart.

Nickell, Walter P. COMMON TERNS NEST ON MUSKRAT LODGES AND FLOATING CATTAIL MATS. Wilson Bull. 78(1): 123-124, 1 fig. Mar. 1966. WR 123: 47
[Cranbrook Inst. Sci., Bloomfield Hills, Mich.] Courtesy/ Paul A. Stewart.

Rand, A. L. A DISPLAY OF THE BOAT-BILLED HERON, COCHLEARIUS COCHLEARIUS. Auk 83(2): 304-306, 1 fig. Apr. 1966. WR 123: 47
[Chicago Nat. Hist. Museum, Chicago, Ill.] The display is described and its phylogenetic implications discussed.--Courtesy/ Paul A. Stewart.

Stephen, W. J. D., R. S. Miller, and J. P. Hatfield. DEMOGRAPHIC FACTORS AFFECTING MANAGEMENT OF SANDHILL CRANES. J. Wildl. Mgmt. 30(3): 581-589, 7 figs. July 1966. WR 123: 47
[Canadian Wildl. Serv., Saskatoon.] Abstract: Practices for management of sandhill cranes (Grus canadensis) are affected by the present classification which indicates five subspecies. Investigation in 1961, 1962, and 1963 of the taxonomic status of migrant sandhill cranes at Last Mountain Lake, Saskatchewan, indicated that color of primary feather shafts is not a reliable taxonomic character. Significant differences between adult males and females in weights, lengths of bill, bill from tip to posterior of nostril, tarsus, mid-toe, and total length require that sexes be distinguished when these characters are used for taxonomic purposes, but broad overlap precludes their use for determining sex. Observed frequencies of weights and lengths of tarsus, bill, and bill from tip to posterior of nostril conformed to a normal distribution, but, using the existing criteria, 75 percent of adult males from Last Mountain Lake could not be classified as one of the reported subspecies. It is concluded that use of the existing criteria to differentiate the greater, the lesser, and the Canada sandhill cranes is unwarranted. There were few sandhill crane hunters during the 1964 and 1965 seasons in Canada. Most were seeking recreation; hunting success was low. Because recruitment rate of cranes is low, effective management requires a high degree of confidence in data on crane populations.

Thomas, Lowell P., and Shirley B. Thomas. HERRING GULLS DIVING FOR STARFISH. Quart. J. Fla. Acad. Sci. 28(2): 195-196. 1965. [From Biol. Abstr. 47(11), 1966.] WR 123: 48

[Inst. Marine Sci., Univ. Miami, Miami, Fla.] An account is given of herring gulls (Larus argentatus) at Long Island Sound diving for starfish (Asterias forbesi). A brief summary of predation on echinoderms by birds is included.

Thompson, Daniel Q. UNUSUAL CHOICE OF COVER BY WOODCOCK. N.Y. Fish & Game J. 12(2): 240-242. July 1965. WR 123: 48

[N.Y. Coop. Wildl. Res. Unit, Cornell Univ., Ithaca.] Rush and sedge within 30 yds. of arborescent shrubs.

HAWKS & OWLS

Besson, J. L'AIGLE ROYAL (AQUILA CHRYSAETOS) DANS LES ALPES DU SUD. [THE ROYAL EAGLE (AQUILA CHRYSAETOS) OF THE SOUTHERN ALPS.] Alauda Rev. Int. Ornithol. 32(1): 45-50. 1964. [From Biol. Abstr. 47(12), 1966. In French.] WR 123: 48

Carriker, M. A., Jr. NEW SPECIES AND RECORDS OF MALLOPHAGA (INSECTA) FROM NEOTROPICAL OWLS (STRIGIFORMES). Am. Midland Nat. 76(1): 74-99, 37 figs. July 1966. WR 123: 48

[Smithsonian Inst., Calle 35, No. 34-20, Bucaramanga, Colombia.]

Catuneanu, Ion I. LA NIDIFICATION DE L'ÉPERVIER COMMUN (ACCIPITER N. NISUS L.) DANS LA R. P. ROUMAINE. [NESTING OF THE COMMON SPARROW-HAWK (ACCIPITER N. NISUS L.) IN RUMANIA.] Trav. Mus. Hist. Nat. "Grigore Antipa" 4: 417-430, illus., maps. 1963. [From Biol. Abstr. 47(10), 1966. In French with Russian and Romanian summ.] WR 123: 48

Duncan, Stewart. AN ANALYSIS OF THE STOMACH CONTENTS OF SOME COOPER'S HAWKS (ACCIPITER COOPERII). Auk 83(2): 308. Apr. 1966. WR 123: 48

[Boston Univ., Boston, Mass.] Fifty-eight Cooper's hawks stomachs contained 64% bird fragments, 33% remains of mammals, 10% reptiles and amphibians, and 10% insects. The stomachs were obtained from the U.S. Fish and Wildlife Service and represented "all major geographical regions of the United States."--Courtesy/ Paul A. Stewart.

Grant, James. THE BARRED OWL IN BRITISH COLUMBIA. Murrelet 47(2): 39-45, 1 fig. May-Aug. 1966. WR 123: 48

[Vernon, British Columbia.]

Greer, J. Keever, and Dillman S. Bullock. NOTES ON STOMACH CONTENTS AND WEIGHTS OF SOME CHILEAN BIRDS OF PREY. Auk 83(2): 308-309. Apr. 1966. WR 123: 48

[Mich. State Univ., East Lansing.] Data involve the following species: white-tailed kite (Elanus leucurus), rufous-tailed hawk (Buteo ventralis), Harris' hawks (Parabuteo unicinctus), cinereous harrier (Circus cinereus), crested caracaras (Polyborus plancus), sparrow hawks (Falco sparverius), and great horned owl (Bubo virginianus).--Courtesy/ Paul A. Stewart.

Haugh, John R., and Tom J. Cade. THE SPRING HAWK MIGRATION AROUND THE SOUTHEASTERN SHORE OF LAKE ONTARIO. Wilson Bull. 78(1): 88-110, 10 figs. Mar. 1966. WR 123: 48

[Syracuse Univ., Syracuse, N.Y.] The following subjects are considered: species of hawks and their times of migration, association of hawk migration with meteorological factors, and influence of local weather factors on the movement of hawks.--Courtesy/ Paul A. Stewart.

Heintzelman, Donald S. CANNIBALISM AT A BROAD-WINGED HAWK NEST. Auk 83 (2): 307. Apr. 1966. WR 123: 49

[629 Green St., Allentown, Pa.] A nestling Buteo platypterus was partly eaten, presumably by its nest mates.--Courtesy/ Paul A. Stewart.

Hicks, David L., David T. Rogers, Jr., and George I. Child. AUTUMNAL HAWK MIGRATION THROUGH PANAMA. Bird-Banding 37(2): 121-123. Apr. 1966. WR 123: 49

[Univ. Ga., Athens.] Immense mixed flocks of broad-winged hawks (Buteo platypterus) and Swainson's hawks (Buteo swainsoni) were reported flying southeastward, parallel to the sea coast. No migrating hawks were observed on cool, cloudy, or rainy mornings.--Courtesy/ Paul A. Stewart.

Hildén, Olavi. RUSKOSUOHAUKAN ESIINTYMISESTÄ, ELINTAVOISTA JA RAVINNOSTA SUOMESSA. [OCCURRENCE, HABITS AND FOOD OF THE MARSH HARRIER (CIRCUS AERUGINOSUS) IN FINLAND.] Suomen Riista 18: 82-93, 3 figs. 1966. In Finnish with English summ. WR 123: 49

Hofslund, P. B. HAWK MIGRATION OVER THE WESTERN TIP OF LAKE SUPERIOR. Wilson Bull. 78(1): 79-87, 2 figs. Mar. 1966. WR 123: 49

[Univ. Minn., Duluth.] Summary: Duluth, Minnesota, can lay claim to one of the great hawk flyways of the world. The consistency of the flyway through the fall migration is quite remarkable when one considers that it does not appear to have the natural features apparent in some of the other Great Lakes areas. Therefore, it is paramount to search for more than one factor operating toward making it a major migration focal point. The factors that we believe are important are: a modified funnel formed by the lake and a range of hills, with Duluth at the funnel tip; a forest triangle that would direct both western and eastern breeding birds toward Duluth; a natural tendency of the hawks to move toward the southwest; free-moving thermals that could pile up against the lake on winds with a westerly component; and the possible effect of Lake Superior as a guideline. We assume because of these factors, that our supply comes from the east through a possible island hopping, the west from natural tendencies to stay with the forested areas and the movements of thermals on a westerly wind, and from the north by virtue of the natural funnel previously mentioned.--Courtesy/ Paul A. Stewart.

Kleiman, Joseph P. MIGRATION OF ROUGH-LEGGED HAWKS OVER LAKE ERIE. Wilson Bull. 78(1): 122. Mar. 1966. WR 123: 49

[3271 Albert Ave., Royal Oak, Mich.] Four rough-legged hawks (Buteo lagopus) were observed until they were lost from sight flying southward over Lake Erie from Point Pelee, Ontario.--Courtesy/ Paul A. Stewart.

Mallette, Robert D., and John C. Borneman. FIRST COOPERATIVE SURVEY OF THE CALIFORNIA CONDOR. Calif. Fish & Game 52(3): 185-203, 3 figs. July 1966. WR 123: 49

Abstract: A California Condor Survey Committee was formed on July 21, 1965 to determine the feasibility of a condor survey and to conduct, analyze, and report the results of such a survey. An experimental 2-day survey was conducted on October 16 and 17, 1965. Forty-eight sightings were reported by 16 of the 69 observation stations manned on October 16, 1965. Fifty-eight sightings were reported by 16 of the 63 observation stations manned on October 17, 1965. These sightings, by an evaluation of the reports, were reduced to a population index of 33 and 38 individual birds, respectively, for the 2-day survey. In the opinion of the authors and committee members, the count of 38 condors made on October 17, 1965, was the more reliable population index. No attempt was made to project the index figure to estimate the total condor population. Observations of young condors were of particular importance as an indicator of continuing nesting success. The annual survey will be continued to determine trends in the condor population.

Maser, Chris, and Edmund D. Brodie, Jr. A STUDY OF OWL PELLET CONTENTS FROM LINN, BENTON AND POLK COUNTIES, OREGON. Murrelet 47(1): 9-14. Jan.-Apr. 1966. WR 123: 50

[Oreg. State Univ., Corvallis.] "The contents of cast owl pellets show that most of the animals eaten by owls are detrimental to man and his interests. It is to his advantage, therefore, to understand and protect the owls from wanton slaughter. Furthermore, it is not inconceivable that population trends of these food species could be detected through the long-range study of such pellets."

Spacek, Miroslav, and Karel Kovar. O HNIZDENI ORLA KRALOVSKEHO (AQUILA HELIACA SAV.). [THE NESTING OF AQUILA HELIACA SAV.] Ziva 13(5): 197-199, illus. 1965. [From Biol. Abstr. 47(11), 1966. In Czech.] WR 123: 50

Sulkava, Seppo. HUUHKAJAN PESIMISAIKAISESTA RAVINNOSTA SUOMESSA. [FEEDING HABITS OF THE EAGLE OWL (BUBO BUBO) IN FINLAND.] Suomen Riista 18: 145-156, 3 figs. 1966. In Finnish with English summ. WR 123: 50

Trost, Charles H., and J. Howard Hutchison. FOOD OF THE BARN OWL IN FLORIDA. Quart. J. Fla. Acad. Sci. 26(4): 382-384. 1963. [From Biol. Abstr. 47(11), 1966.] WR 123: 50

[Univ. Fla., Gainesville.]

Vericad, J. R. NEUVOS DATOS SOBRE EL CONTENIDO DE OVILLOS DE LECHUZA (TYTO ALBA) EN ORRIUS (MARESME, PROV. DE BARCELONA). [NEW INFORMATION ON THE CONTENTS OF PELLETS REGURGITATED BY THE OWL (TYTO ALBA) IN ORRIUS (PROVINCE OF BARCELONA).] Misc. Zool. 2(1): 145-147, illus. 1965. [From Biol. Abstr. 47 (11), 1966. In Spanish.] WR 123: 50

White, C. M. ROADSIDE RAPTOR COUNT THROUGH UTAH, COLORADO, AND KANSAS. Kans. Ornithol. Soc. Bull. 16: 18-19. 1965. [From Auk 83(2), 1966.] WR 123: 50

Willoughby, Ernest J. WING AND TAIL MOLT OF THE SPARROW HAWK. Auk 83(2): 201-206, 2 figs. Apr. 1966. WR 123: 50

[Syracuse Univ., Syracuse, N.Y.] The sequence and variation of the wing and tail feather molting in 11 captive Falco sparverius.--Courtesy/ Paul A. Stewart.

BLACKBIRDS, STARLINGS, CROWS

Bailey, Edgar P. ABUNDANCE AND ACTIVITY OF STARLINGS IN WINTER IN NORTHERN UTAH. Condor 68(2): 152-162, 10 figs. Mar.-Apr. 1966. WR 123: 50

[Natl. Park Serv., Capulin, N. Mex.] Starlings (Sturnus vulgaris) were first observed in Utah in 1939 and in 10 years had so increased in numbers that they were a nuisance. Winter flocks now contain 100,000 birds, and complaints of damage in orchards and cattle feedlots are increasing. In 97 roadside censuses, the average number of starlings counted per day was 1211, peak numbers being found in December. Cold weather caused starlings to concentrate in feedlots and resulted in higher counts. Fewer birds were in trees and more were on the ground during windy than during calm weather. Cloudiness did not influence starling feeding activity. Snow increased and rain decreased use of feedlots.--From summ. Courtesy/ Paul A. Stewart.

Barbier, P. G. R. BLACKBIRD FEEDING YOUNG ON DEAD LEAVES. British Birds 59(2): 77-78. Feb. 1966. WR 123: 50

Bickford, A. A., G. H. Ellis, and H. E. Moses. EPIZOOTIOLOGY OF TUBERCULOSIS IN STARLINGS. J. Am. Vet. Med. Assoc. 149(3): 312-318, 2 figs. 1 Aug. 1966. WR 123: 51

[Purdue Univ., Lafayette, Ind.] Summary: Acid-fast bacteria obtained from a starling were identified as Mycobacterium avium on the basis of their pathogenicity for chickens and rabbits and several cultural features. Of 125 starlings examined, 7 had gross tubercles in the liver, and 1 also had lesions in the spleen and intestines. All starlings were collected on an Indiana farm where a high incidence of tuberculosis occurred in swine.

Brenner, Fred J. ENERGY AND NUTRIENT REQUIREMENTS OF THE RED-WINGED BLACKBIRD. Wilson Bull. 78(1): 111-120, 1 fig. Mar. 1966. WR 123: 51

[Thiel Coll., Greenville, Pa.] The mean existence energy requirement of birds under an increasing photoperiod at an environmental temperature between 21 and 25 C was 24.9 kcal/bird-day. The existence energy requirements increased from 25.8 kcal/bird-day at 21 C and 15 hours of light to 45.5 kcal/bird-day at 11 C and 9 hours of light. The existence energy requirements of birds held at a 10-hour photoperiod for 16 weeks also increased as the temperature decreased.--From summ. Courtesy/ Paul A. Stewart.

Brenner, Fred J. THE INFLUENCE OF DROUGHT ON REPRODUCTION IN A BREEDING POPULATION OF REDWINGED BLACKBIRDS. Am. Midland Nat. 76(1): 201-210. July 1966. WR 123: 51

[Thiel Coll., Greenville, Pa.] Abstract: The history of a breeding population of redwinged blackbirds (Agelaius phoeniceus) in Centre Co., Pennsylvania, recorded from 1960 through 1964, was analyzed to gain a better understanding of the effects of drought on a population. The average air temperature in the study area during the nesting season in May and June was 15.8 C in 1962 and 17.1 C in 1964. During the four years of study (1960-63), the average annual precipitation was 6.55 inches below the normal annual precipitation of 39.15 inches, and the vegetation changed from a cattail (Typha latifolia)-sedge (Carex spp.) marsh to predominantly a sedge marsh. The number of males that established permanent territories was essentially the same in each of the five years of study. However, the female portion of the population decreased from 42 in 1960 to 7 in 1963, but increased to 17 in 1964. The total number of nestlings decreased from 100 in 1960 to 15 in 1963, increasing to 40 in 1964. The number of young lost to the population through mortality resulted in a variation in the number of young fledged. The size of the population appears to correspond to the energy available to the population as insects. The relationship between rainfall and reproduction in birds is discussed. In contrast to tropical and xerophilic species, rainfall does not appear to be a stimulus for the timing of nesting activity in birds in the temperate deciduous forest biome. However, rainfall and its effects on the type of vegetation and insect biomass may regulate the size of the population.

Ficken, Robert W. COMPARISON OF THE SEXUAL RESPONSES OF COMMON GRACKLES TO NORMAL FEMALES AND TO MOUNTS OF SOLICITING FEMALES. Wilson Bull. 78(1): 125-126. Mar. 1966. WR 123: 51

[Univ. Md., College Park.] Courtesy/ Paul A. Stewart.

Havlin, L. Jiri, and Cestmir Folk. [FOOD AND ECONOMIC IMPORTANCE OF THE STARLING, STURNUS VULGARIS L.] Zool. Listy 14(3): 193-208. 1965. [From Bird-Banding 37(2), 1966. In Czech with English summ.] WR 123: 51

Maxwell, George Ralph, II. LIFE HISTORY OF THE COMMON GRACKLE, QUISCALUS QUISCULA (LINNAEUS). Ph.D. thesis, Ohio State Univ. 232 p. 1965. [From abstr. in Dissertation Abstr. 26(11), 1966.] WR 123: 51

A study of the nesting cycle with a secondary treatment of taxonomy and parasitism. The areas of the nesting cycle discussed are: voice, courtship, development of the young, post-nesting activities, and migration.

Meanley, Brooke, and Robert T. Mitchell. SELECTED BIBLIOGRAPHY ON THE RED-WINGED BLACKBIRD. US F&WS, Spec. Sci. Rept.--Wildl. no. 97. i + 12 p. June 1966. WR 123: 52

[Patuxent Wildl. Res. Center, Laurel, Md.] Abstract: This bibliography lists alphabetically by author 128 informative references on the life history, biology, economic status, and control of the red-winged blackbird. A brief description is given for those reference titles that do not clearly indicate the nature of the contents of the paper.

Royall, Willis C., Jr. BREEDING OF THE STARLING IN CENTRAL ARIZONA. Condor 68(2): 196-205, 1 fig. Mar.-Apr. 1966. WR 123: 52

[Bureau Sport Fisheries & Wildl., Mesa, Ariz.] The following are discussed: nesting sites, nest building, egg laying, time and interval of egg laying, clutch size, incubation, nest desertion, nest destruction, egg losses, brood sizes, causes of nestling losses, renesting, nesting success, and nest sanitation.--Courtesy/ Paul A. Stewart.

Selander, Robert K., and Suh Yung Yang. BEHAVIORAL RESPONSES OF BROWN-HEADED COWBIRDS TO NESTS AND EGGS. Auk 83(2): 207-232, 4 figs. Apr. 1966. WR 123: 52

[Univ. Texas, Austin.] Captive first-year female Molothrus ater responded to empty nests and nests containing eggs by sitting in the nest cup. Intramuscular injections of prolactin, progesterone and estrogen had no appreciable effect on the response of female cowbirds to nests or eggs.--Courtesy/ Paul A. Stewart.

Wallace, J. H., and O. W. Olsen. ENDOPARASITES OF THE RED-WINGED BLACKBIRD AGELAIUS PHOENICEUS L. IN COLORADO. Bull. Wildl. Disease Assoc. 2(3): 80. July 1966. WR 123: 52

[Norwich Pharmacal Co., Norwich, N.Y.]

Yates, Vance J., and Louise T. Miller. THE ISOLATION OF AVIAN TUBERCULOSIS FROM A STARLING. Bull. Wildl. Disease Assoc. 2(3): 84-85. July 1966. WR 123: 52

[Univ. R.I., Kingston.] "This isolation is of interest because feral birds are not commonly infected with tuberculosis."

OTHER BIRDS

Adamyan, M. S. [ECOLOGY OF THE DESERT ROCK-SPARROW (CARPOSPIZA BRACHYDACTYLA) IN THE ARMENIAN SSR.] Zool. Zhur. 44(4): 569-577, illus. 1965. [From Biol. Abstr. 47(9), 1966. In Russian with English summ.] WR 123: 52

Johnston, David W. ECOLOGY OF THE INDIGO BUNTING IN FLORIDA. Quart. J. Fla. Acad. Sci. 28(2): 199-211. 1965. [From Bird-Banding 37(2), 1966.] WR 123: 52

Michev, Tanio. [ON THE BIOLOGY OF THE KINGFISHER (ALCEDO ATTHIS ATTHIS L.) IN THE NATURE PRESERVE "SREBIRNA," SILESTRENSKOGO DISTRICT.] Izvestia Zool. Inst. C Musee (Sofia) 22: 175-181, 6 figs. 1966. In Bulgarian with Russian and German summ. WR 123: 52

Mikkola, Kauri, and Pellervo Koivunen. ÜBER DIE BRUTBIOLOGIE UND DAS VORKOMMEN DER ZWERGAMMER (EMBERIZA PUSILLA PALL.) IN FINNLAND. [ON THE BREEDING BIOLOGY AND OCCURRENCE OF THE LITTLE BUNTING (EMBERIZA PUSILLA) IN FINLAND.] Ornis Fennica 43(1): 1-12, 4 figs. 1966. In German with Finnish summ. WR 123: 52

[Zool. Inst., Univ. Helsinki, Helsinki, Finland.]

Mustafaeva, R. G. [ECOLOGY OF THE BLACKBIRD (TURDUS MERULA) IN AZERBAIDZHAN.] Izv. Akad. Nauk Azerbaidzh. SSR Ser. Biol. Nauk 5: 47-51. 1964. [From Biol. Abstr. 47(11), 1966. In Russian.] WR 123: 52

Nielsen, Lloyd. MIGRATION OF THE BLUE-FACED HONEYEATER. Emu 65(4): 305-309, 1 fig. Mar. 1966. WR 123: 53
[Jandowae, Queensland, Australia.] "Entomyzon cyanotis."

Salt, W. Ray. A NESTING STUDY OF SPIZELLA PALLIDA. Auk 83(2): 274-281, 1 fig. Apr. 1966. WR 123: 53
[Univ. Alberta, Edmonton, Alberta, Canada.] Summary: On a study area near Edmonton, Alberta, clay-colored sparrows occupied established breeding territories from about the middle of May to about the middle of July. Nest building started during the last week of May but did not occur after the end of June. Four eggs were usually laid. Incubation commenced with the laying of the third egg and continued for ten days. Young left the nest eight days after hatching and before they were capable of flight. Cowbird parasitism was not tolerated. Nestling losses were considerably lower than egg losses.--Courtesy/ Paul A. Stewart.

Skead, C. J. HADEDAH IBIS HAGEDASHIA HAGEDASH (LATHAM) IN THE EASTERN CAPE PROVINCE. Ostrich 37(2): 103-108. June 1966. WR 123: 53
[Univ. Cape Town, Cape Town, South Africa.]

Skead, C. J. A STUDY OF THE BLACK CUCKOO-SHRIKE CAMPEPHAGA PHOENICIA (LATHAM). Ostrich 37(2): 71-75. June 1966. WR 123: 53
[Univ. Cape Town, Cape Town, South Africa.]

Talpeanu, M. DONNÉES SUR LA BIOLOGIE DE GLAREOLA PRATINCOLA PRATINCOLA L. ET MOTACILLA FLAVA FELDEGG MICH. (AVES). [DATA ON THE BIOLOGY OF GLAREOLA PRATINCOLA PRATINCOLA L. AND MOTACILLA FLAVA FELDEGG MICH. (AVES).] Trav. Mus. Hist. Nat. "Grigore Antipa" 4: 401-416, illus., map. 1963. [From Biol. Abstr. 47(10), 1966. In French with Russian and Romanian summ.] WR 123: 53

Vande Weghe, J. P. DE DWERGMEEUW LARUS MINUTUS PALLAS IN BELGIE. [THE SMALL MALE LARUS MINUTUS (ECOLOGY, MIGRATION, HABITS) PALLAS IN BELGIUM.] Gerfaut Rev. Belg. Ornithol. 52(2): 353-369, illus., maps. 1962. [From Biol. Abstr. 47(9), 1966. In Dutch.] WR 123: 53

Walkinshaw, Lawrence H. SUMMER BIOLOGY OF TRAILL'S FLYCATCHER. Wilson Bull. 78(1): 31-46, 4 figs. Mar. 1966. WR 123: 53
[1703 Wolverine-Federal Tower, Battle Creek, Mich.] Migration, territory, habitat, nest sites, nests, nesting dates, eggs, incubation, nesting success, cowbird parasitism, young, second nesting attempts, returns of banded nestlings, returns of banded adults, adult weights and measurements for Empidonax traillii are discussed.--Courtesy/ Paul A. Stewart.

REPTILES & AMPHIBIANS

Auffenberg, Walter. ON THE COURTSHIP OF GOPHERUS POLYPHEMUS. Herpetologica 22(2): 113-117, 1 fig. 30 June 1966. WR 123: 53
[Univ. Fla., Gainesville.]

Bartholomew, George A. A FIELD STUDY OF TEMPERATURE RELATIONS IN THE GALÁPAGOS MARINE IGUANA. Copeia 1966(2): 241-250, 5 figs. 21 June 1966. WR 123: 53
[Univ. Calif., Los Angeles.]

Bleakney, J. Sherman. AN UNEXPLAINED MASS MORTALITY OF TURTLES. Canadian Field-Nat. 80(2): 115. Apr.-June 1966. WR 123: 53
[Acadia Univ., Wolfville, Nova Scotia, Canada.] "Emydoidea blandingi and Chrysemys picta marginata."

Bostic, Dennis L. A PRELIMINARY REPORT OF REPRODUCTION IN THE TEIID LIZARD, CNEMIDOPHORUS HYPERYTHRUS BELDINGI. Herpetologica 22(2): 81-90, 3 figs. 30 June 1966. WR 123: 54
[Palomar Coll., San Marcos, Calif.]

Bostic, Dennis L. THERMOREGULATION AND HIBERNATION OF THE LIZARD, CNEMIDOPHORUS HYPERYTHRUS BELDINGI (SAURIA: TEIIDAE). Southwestern Nat. 11(2): 275-289, 4 figs. 30 June 1966. WR 123: 54
[Palomar Coll., San Marcos, Calif.]

Bragg, Arthur N. LONGEVITY OF THE TADPOLE STAGE IN THE PLAINS SPADEFOOT (AMPHIBIA: SALIENTIA). Wasmann J. Biol. 24(1): 71-73. Spring 1966. WR 123: 54
[Univ. Okla., Norman.]

Felix, Jiri. MORSTI HADI VE VDR. [SEA SNAKES OF VIETNAM.] Ziva 13(5): 192-193, illus. 1965. [From Biol. Abstr. 47(12), 1966. In Czech.] WR 123: 54

Felix, Jiri. ZELVY VE VDR. [TURTLES IN NORTH VIETNAM.] Ziva 13(6): 227-228, illus. 1965. [From Biol. Abstr. 47(12), 1966. In Czech.] WR 123: 54

Heatwole, Harold, and Ivan B. Banuchi. ENVENOMATION BY THE COLUBRID SNAKE, ALSOPHIS PORTORICENSIS. Herpetologica 22(2): 132-134. 30 June 1966. WR 123: 54
[Univ. Puerto Rico, Río Piedras.]

Hutchison, J. B. INVESTIGATIONS ON THE NEURAL CONTROL OF CLASPING AND FEEDING IN XENOPUS LAEVIS (DAUDIN). Behaviour 24(1-2): 47-66, 13 figs. + 3 pls. 1964. WR 123: 54
[Sub-Dept. Anim. Behaviour, Madingley, Cambridge, England.]

Hutchison, Victor H., and Walter G. Whitford. SURVIVAL AND UNDERWATER BUCCAL MOVEMENTS IN SUBMERGED ANURANS. Herpetologica 22(2): 122-127, 2 figs. 30 June 1966. WR 123: 54
[N. Mex. State Univ., University Park.]

Jenssen, Thomas A., and W. D. Klimstra. FOOD HABITS OF THE GREEN FROG, RANA CLAMITANS, IN SOUTHERN ILLINOIS. Am. Midland Nat. 76(1): 169-182. July 1966. WR 123: 54
[Univ. Okla., Norman.]

Landreth, Hobart F., and Denzel E. Ferguson. EVIDENCE OF SUN-COMPASS ORIENTATION IN THE CHORUS FROG, PSEUDACRIS TRISERIATA. Herpetologica 22(2): 106-112, 3 figs. 30 June 1966. WR 123: 54
[Miss. State Coll., State College.]

Legler, John M. NOTES ON THE NATURAL HISTORY OF A RARE CENTRAL AMERICAN TURTLE, KINOSTERNON ANGUSTIPONS LEGLER. Herpetologica 22(2): 118-122. 30 June 1966. WR 123: 54
[Univ. Utah, Salt Lake City.]

Licht, Paul, William R. Dawson, and Vaughan H. Shoemaker. HEAT RESISTANCE OF SOME AUSTRALIAN LIZARDS. Copeia 1966(2): 162-169, 1 fig. 21 June 1966. WR 123: 54
[Univ. Calif., Berkeley.] Survival times of Australian lizards representing 29 species of 16 genera in the Agamidae, Scincidae, Gekkonidae, and Pygopodidae, were determined at a series of high temperatures in the range in which this function shows strong thermal dependence.--From abstr.

Menzies, J. I. THE SNAKES OF SIERRA LEONE. Copeia 1966(2): 169-179, 6 figs. 21 June 1966. WR 123: 54
[Univ. Ife, Ibadan, Nigeria.]

Muskhelishvili, T. A. [NEW FINDINGS ABOUT THE REPRODUCTION OF THE CAUCASIAN SALAMANDER (MERTENSIELLA CAUCASICA).] Soobshch. Akad. Nauk Gruz. SSR 36(1): 183-185, illus. 1964. [From Biol. Abstr. 47(9), 1966. Original with Russian summ.] WR 123: 55

Pienaar, U. de V., and V. F. M. FitzSimons. THE REPTILE FAUNA OF THE KRUGER NATIONAL PARK. Koedoe 1966(1): 1-223, 73 figs., 100 pls. 1966. WR 123: 55
[Kruger Natl. Park, Skukuza, South Africa.] "During a survey period covering almost seven years, 102 different species, comprising 52 species and subspecies of lizards, 45 snakes, 1 crocodile and 4 tortoises and terrapins have been identified within the borders of the Park. Compared to any other area of similar size in Africa, south of the Zambesi, this represents an imposing if not unique list."

Ries, Kristen M., and Edward D. Bellis. SPRING FOOD HABITS OF THE RED-SPOTTED NEWT IN PENNSYLVANIA. Herpetologica 22(2): 152-155. 30 June 1966. WR 123: 55
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